THE REGISTRAR GENERAL'S STATISTICAL REVIEW OF ENGLAND & WALES FOR THE TWO YEARS 1946–1947

TEXT, VOL. I, MEDICAL

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CORRIGENDA

Statistical Review for the six years 1940 to 1945, Text, Vol. I, Medical.

Page 28. Last paragraph—*for* registered births *read* birth occurrences.

Ages 4 weeks–3 months	*for* $0{\cdot}346B_1 + 0{\cdot}654B_2$ *read* $0{\cdot}346B_0 + 0{\cdot}654B_1$
Ages 3–6 months	*for* $\frac{1}{2}(B_2 + B_3)$ *read* $\frac{1}{2}(B_1 + B_2)$
Ages 6-9 months	*for* $\frac{1}{2}(B_3 + B_4)$ *read* $\frac{1}{2}(B_2 + B_3)$
Ages 9–12 months	*for* $\frac{1}{2}(B_4 + B_5)$ *read* $\frac{1}{2}(B_3 + B_4)$

STATISTICAL REVIEW, 1946-1947

Note.—Of the tables referred to in this report, those numbered in Arabic numerals, will be found in " Tables, Part I—Medical ", and those lettered will be found in " Tables, Part II—Civil ", for the year in question, whilst those numbered in Roman numerals appear in this Review, except where otherwise stated. For constitution of the regions of the country *see* the note on page 54.

INTRODUCTION

In the years 1946 and 1947 conditions in England and Wales were undergoing extensive changes ; for instance, many young men were returning to civilian life from the Forces, movements of population were large and the birth rate in 1947 was the highest for twenty-six years. These factors had some influence on the health of the people and were also of great significance in making extra caution necessary in the interpretation of the statistics reviewed in this volume. One other factor which had a marked effect on health in 1947 was the severe weather experienced over the whole country in the first three months of the year.

The main part of this volume is concerned with mortality and causes of death, but possibly a more important aspect of the work of the General Register Office in the years 1946 and 1947 was that concerning the preparations which were being made for extending existing arrangements for collecting information on morbidity. Figures of notifications of certain infectious diseases have been published by the General Register Office, since 1895 for London and since 1922 for the whole country. Provision was made in 1944 for the collection of details about the sex and age of the people notified as suffering from these diseases and, also in 1944, the Survey of Sickness was started to give an indication of the general state of health of the country. Further developments in the field of national morbidity statistics were to some extent dependent on the introduction of a satisfactory classification of diseases and injuries, and reference was made to the first preparations for this in the Text of the Registrar General's Statistical Review for 1940–45.

In December 1945 an Anglo-United States-Canadian Working Party, which met in Washington and in Ottowa and included Dr. Percy Stocks of the General Register Office and Dr. A. H. T. Robb-Smith of the Medical Research Council Committee on Classification of Hospital Morbidity Statistics, began the task of drafting a single international classification which could be used for both morbidity and mortality statistics. The first draft of the List of categories, prepared by this Working Party in Washington in the winter of 1945–46, with a draft tabular list of the terms to be included, prepared subsequently, mainly by Dr. Stocks, was subjected to detailed examination in this country by a Medical Advisory Committee under the Chairmanship of Sir Ernest Rock Carling which was set up to consider from the medical point of view and to advise upon the alterations to be suggested by H.M. Government at the sixth (1948) decennial revision of the International List of Causes of Death. Sub-Committees were appointed to consider separate sections of the Classification, and some indication of the thoroughness with which the Committee did its work is given by the fact that twenty Sub-Committee meetings and six full Committee meetings were held at Somerset House between October, 1946, and January, 1947. The Committee approved the general structure of the draft Classification, but suggested considerable amendments in matters of detail. The membership of the Committee is given on page 314.

The Anglo-United States-Canadian Working Party, meeting again in Ottawa in March, 1947, prepared a revised draft incorporating as far as possible the amendments proposed by the three countries. Meanwhile arrangements were in train by which the new World Health Organization would be responsible for future revisions of the International List including that of 1948. A Technical Committee of Experts appointed in January 1947 by the Interim Commission of the World Health Organization also met in Ottawa in March 1947 under the chairmanship of Dr. Stocks. The revised draft was made available to the new Committee and after some further revision was circulated to 72 Governments for comment. The Technical Committee of Experts held a Second Session in October, 1947, when they considered the amendments proposed by these Governments and recommended that the new Classification should be adopted by the World Health Organization. Details of events of 1948 are proper to the next volume of this Review (that for 1948–49). It will suffice to say here that the new international list was approved by a special Conference at Paris in April, 1948, and by the First World Health Assembly in Geneva in July, 1948, and that, after consultation with the Ministry of Health and the Presidents of the Royal Colleges and others, the Registrar General appointed in November, 1948 a standing Advisory Committee on Medical Statistics which has wide terms of reference and meets regularly at Somerset House under the Chairmanship of Sir Ernest Rock Carling.

With the prospect that a satisfactory classification for morbidity statistics would be available for use in this country by the beginning of 1949, a Working Party on Hospital Records had been set up in 1945 to consider whether the experiment of collecting statistics by sampling the records of patients admitted to beds in the E.M.S. hospitals should be extended to hospitals generally. The Working Party drafted a summary form for use in collecting statistics of hospital in-patients and, at the end of 1947, recommended to the Chief Medical Officer of the Ministry of Health that a pilot survey should be started in selected hospitals as soon as possible. In the meantime, the draft form was tried out during 1947 in four hospitals which submitted detailed criticism, enabling the Working Party to draw up the final summary form to be used in a full trial enquiry.

The Survey of Sickness was well established by the middle of 1946, since when a continuous sequence of figures has been derived from it to indicate month-to-month variations in the amount of sickness experienced, the number of people suffering from sickness, the duration of incapacity caused and the extent to which doctors are consulted. The brief section on the subject in this volume (pages 278 to 288) shows how the cold spell early in 1947 increased the extent of incapacity and of medical consultations due to sickness although there was no increase in the number of people ill or in the number of illnesses which they suffered. Another point of particular interest in this section is the indication given by the distribution of the numbers of illnesses recorded that certain people may suffer from " sickness proneness " analagous to the " accident proneness " which has been noticed previously. Reference is made to other places where the results of the Survey have been published and in particular to the detailed study made in " Sickness in the Population of England and Wales in 1944–47 ".* In this report the validity of the sampling methods is considered, the effect of different factors on the amount of sickness, incapacity, etc. is discussed and morbidity rates for different diseases are derived from the results of the Survey.

* Studies on Medical and Population Subjects, No. 2. H.M. Stationery Office, price 1s. (by post 1s. 2d.).

This study also considered in detail the extent of deficiency in notification of infectious diseases and reached the conclusion, for example, that the only notifiable diseases for which notification could be regarded as fairly complete were acute poliomyelitis, cerebro-spinal fever, diphtheria and scarlet fever, respiratory tuberculosis coming next with probably nine-tenths of active cases notified. Information about the incidence of certain complaints for which priority allowances of food were granted was also examined on the basis of records of priority certificates issued and of the Survey of Sickness data. Estimates of the incidence of these complaints were made on the basis of these two independent sources and proved remarkably consistent with each other, those for diabetes, for example, both falling between 230 and 240 per 100,000 population. Fundamental to the whole of this study and to much of the future study of morbidity statistics were the definitions set out at the beginning of the report.

At the beginning of 1947 the General Register Office took over from the Radium Commission responsibility for the central collection and analysis of records relating to registered cases of cancer in England and Wales. The progress of this scheme has also been discussed in a special report, "Cancer Registration in England and Wales",*which describes the methods being used in the enquiry and gives figures relating to examinations one year after registration of the patients registered in 1945 and 1946. The number of cases registered increased from about 29,000 in 1945 to 42,000 in 1946 and 49,000 in 1947; it is important, in order that full value may be derived from this enquiry, that registration should extend to practically all new cases of cancer in the country, estimated at over 100,000 a year. The report explains fully the objects of the enquiry, one of the most important being the evaluation of the results of different methods of treatment in relation to different sites and forms of the disease. This is a long-term project and it will not be possible to draw firm conclusions for several years, but the lines on which such conclusions may be expected to be derived from the enquiry have been indicated in the report.

Mortality in 1946 and 1947 is dealt with in general on pages 7 to 15 of this volume. The changes in crude death rates and in the different forms of standardized rates are discussed, and it is shown how the different behaviour of the different forms of these rates, partly due to the restoration to the population at risk of young men from the Forces with a very low death rate, demonstrates the relative advantages and weaknesses of the different methods of standardizing rates. It is clear that mortality was reduced in 1946 and increased again in 1947, but this information by itself disguises changes in different age groups which give more valuable information. Amongst women, for example, the increase in mortality in 1947 occurred only in the age groups 0–4, 15–24 and 65 and over, while amongst men, although the crude death rate was the same in 1947 as in 1946, there was an increase in mortality in every age group over 45.

In the section on mortality at ages over 1 year the problem of the extent to which death rates in specific age groups were affected by the absence of men and women in the Forces is discussed on pages 50 to 52. The remarkable decrease in 1946 in death rates between ages 1 and 15 and the halting of the decline in 1947 are compared with earlier changes, and the causes of death for which the decline is most marked are identified on pages 57 to 60. Attention is drawn to the contrast between the continuing improvement in the death rate for women between 50 and 70 and the set-back since 1942 in the rate for

* Studies on Medical and Population Subjects, No. 3. H.M. Stationery Office, price 2s. (by post 2s. 2d.).

men, the percentage ratio of the male to female rate at ages 60–64, for example, being as much as 176 in 1947. The increasing importance of cancer and coronary and myocardial disease at ages over 50 and the marked increase in mortality at older ages in 1947 are commented upon.

On pages 67 to 70 mortality according to marital condition in 1946 and 1947 is compared with that in 1930–32. It is shown that the mortality of married women has declined greatly at almost all ages relative to that of single women and that this is not entirely accounted for by the decline in maternal mortality ; the possible effect of tuberculosis as a cause of marital selection is discussed in relation to this decline.

In the section on infant mortality, pages 15 to 17, the method described on pages 28 and 29 of the 1940–45 Text for estimating the number of live births to which the infant deaths in any period should be related is further discussed ; it is shown that by calculating rates on the basis of the number of live births registered in the same period as the deaths it would appear that the infant mortality rate fell in 1946 and increased again in 1947, whereas the more accurate method of calculation shows that it really fell in both years. On pages 21 and 22 mortality at various ages under 1 year is discussed, and it is shown that the rate of decline of neonatal mortality (deaths under 4 weeks) has recently accelerated and now lags only slightly behind that of infant mortality as a whole. A comparison of changes in neonatal mortality and stillbirth rates is shown on page 23. Regional differences in infant mortality are discussed on pages 23 to 26 ; the region of the country with the worst infant mortality in 1946 and 1947 was North IV (Cheshire and Lancashire), and that with the best was the South East ; it is unfortunate that the difference between the best and the worst regions, which had shown signs of diminishing, has increased again, the rate in the combined North regions in 1947 being as much as 55 per cent. and in Wales 50 per cent. above that in the South East. In Table XV comparison of rates for stillbirths, neonatal deaths and post-natal deaths are shown for county boroughs arranged in five regional groups ; although there was a marked correlation between these rates when comparing one regional group with another, there appears to be little correlation between them when comparing county boroughs within the groups, and the only county boroughs with all three rates significantly above the average of their groups were St. Helen's, Stoke on Trent and Wolverhampton, while York was the only county borough with the three rates significantly below average. The causes of infant mortality are discussed on pages 44 to 49 ; doubts have recently been expressed whether deaths certified as due to accidental mechanical suffocation, the number of which has lately been increasing, are, in fact, due to that cause and not to some sudden unrecognised illness ; it is pointed out that, whatever the true underlying cause may be, no satisfactory reason for the marked increase in the number of deaths so certified has been given.

The continued improvement in maternal mortality is considered on pages 216 to 233, and this section also deals with the extent of improvement since 1928–30 in respect of puerperal infection compared with certain groups of non-puerperal streptococcal infections ; it is shown that the death rate from puerperal infections in 1947 was only 8 per cent. of that in 1928–30, that from superficial septic conditions and scarlet fever being 16 per cent. and from deep infections slightly less than 50 per cent., the decline in the non-puerperal groups having been interrupted in the periods 1942–44. The continuity of the decline in mortality from puerperal infections must have been due to improving preventive and therapeutic measures specific to maternity cases reinforcing the effect of sulphonamide and penicillin therapy which was common to all these infections.

Among infectious diseases, scarlet fever is shown on page 78 to be no longer a numerically important cause of death among children in this country. The continued decline of diphtheria incidence and mortality is discussed on pages 83 to 92; it is shown that although diphtheria caused in general considerably less sickness and mortality in towns where the proportion of children immunised was relatively high, there were large variations between individual towns with the same degree of immunisation which must have been due to peculiarities in the infecting organism. The diphtheria immunisation returns to the Ministry of Health are discussed in detail in Appendix A, which includes tables showing the proportion of children under 15 years of age in different areas who had been immunised and the notification and death rates amongst immunised and non-immunised children in different types of area. It is shown on page 122 that measles continued in 1946 and 1947 to display a regular biennial epidemicity with a mild epidemic reaching its peak in the March quarter of 1947. The poliomyelitis epidemic of 1947 is discussed on pages 124 to 138, the differences in notification, death and fatality rates in different types of area being illustrated in the series of diagrams on page 138.

Influenza is discussed on pages 117 to 121. A study is made of the correlation between mortality from influenza, mortality from non-influenzal pneumonia, quarterly air temperatures and time scale in calendar years; earlier conclusions that during influenza epidemics there is an increase in the number of deaths attributed to non-influenzal pneumonia after allowing for the effects of severity of weather and trends of mortality are confirmed. Pneumonia itself is dealt with on pages 205 to 208, where remarkable regional differences in the age distribution of mortality assigned to it in 1947 are pointed out.

It is remarked on page 93 that since 1935 a substantial decrease in deaths from tuberculosis in one year has usually been followed by only a small decrease or even by a slight increase in the year following and that this sequence was sometimes connected with severe winters and influenza epidemics. The substantial decrease of 1,108 deaths in 1946 was followed by an increase of 703 deaths in 1947, of which 519 were accounted for by the increase during the very cold March quarter of that year. A possible explanation of the contrast between the recent trend of mortality from respiratory tuberculosis among men over 55 and that among other groups of the population is suggested on page 96. It has been possible in this volume to make use of tuberculosis notification figures to compare notification rates and mortality rates in different parts of the country; the completeness of notification may vary from one area to another but ways of estimating the extent of this are discussed, and it is shown that among the Northern regions the low death rate from respiratory tuberculosis in North III arises from a low incidence in this area rather than from a low fatality of the disease.

The detailed study of cancer mortality by site, sex and age which was made in the Text for 1940–45 is continued for 1946–47 on pages 144 to 166. It is shown that, apart from cancer of the lung, there has been a progressive decline in cancer mortality both of men and women at all age groups between 35 and 65 since before 1930 and at ages 65–74 since before 1935. On page 167 the variation of cancer mortality between different types of area and between different regions is shown to be much greater for males than for females, but this is also due largely to the dominating effect of cancer of the lung. A detailed study of cancer mortality for certain sites in different areas was made

in " Regional and Local Differences in Cancer Death Rates ".* The influence of environmental factors on mortality for certain sites is further discussed on pages 168 to 170 of the present volume, their great importance in cancer of the stomach again being emphasized.

Mortality from diabetes continued to fall and the Comparative Mortality Index reached a new low level in 1947, less than two-thirds of its level immediately before the war. On page 179 it is shown that making use of the estimate of the incidence of diabetes given in " Sickness in the Population of England and Wales " the annual fatality rate among diabetics which was attributed to diabetes itself was just under four per cent. in 1946–47.

The increase in the number of deaths classified to coronary disease and cardio-vascular degeneration is discussed on pages 199 to 205, and it is shown that the rate of increase, after being very much reduced during the war, exceeded that in the years before the war. It is also shown that, comparing 1947 with 1937–39, male mortality attributed to degenerative heart disease has increased greatly at all ages under 70, whereas female mortality has diminished greatly at the same ages ; it is concluded that the war had cumulative effects on the circulatory systems of men but apparently not on those of women.

Mortality due to violent causes is discussed on pages 233 to 263. The suicide rate which fell for both sexes during the war returned to approximately pre-war level for women but only increased slightly from war-time levels for men ; the influence of relative ease of access to different means of committing suicide in the different regions of the country is described, suicide on railways, for example, being relatively frequent in Greater London. Deaths due to road vehicle accidents, discussed on pages 241 to 253, reached the lowest level for very many years. An analysis of these deaths according to the type of area in which the deceased person lived shows that for men aged 15–64 living in rural areas mortality from road vehicle accidents was almost double that for men living in urban areas, whereas elderly people of both sexes living in larger towns suffered higher mortality than those living in rural or smaller urban areas. There are also separate sections dealing with mortality from railway accidents, air transport accidents and accidents in houses and other places of residence.

In the Medical Text for 1940–45 difficulties in certification of causes of death were discussed in some detail. On pages 263 to 267 of the present volume it is shown that there was a further decrease in 1946-47 in the number of deaths assigned to ill-defined causes, indicating that certification continues to become more precise. The difficulties encountered in certifying causes of death of elderly people are also discussed in this Section. Figures are given on page 277 showing the proportion of deaths in which the certifying practitioner saw the body at some time after death but before certifying the cause of death ; this proportion, which had increased from 51 per cent. in 1928 to 56 per cent. in 1937, reached 61 per cent. in 1947.

Reference has been made in this Introduction to three special studies which provide a more extensive treatment of the subjects covered in them than would be practicable in this Review. The first of these was published in 1947 and they are the first three of a series of occasional publications entitled " Studies on Medical and Population Subjects ". Reference will be made to future studies in this series in the appropriate volumes of the Annual Statistical Review.

* Studies on Medical and Population Subjects, No. 1. H.M. Stationery Office, price 1s. (by post 1s. 2d.).

DEATHS

In 1946 the deaths of 492,090 persons were registered in England and Wales, 252,380 being of males and 239,710 of females. These included 3,036 deaths of non-civilians, 2,928 males and 108 females. In 1947 there were 517,615 deaths, 267,714 being of males and 249,901 of females, including 1,975 and 49 non-civilians. The total in 1946 was 0·8 per cent. above that for 1945, and the total in 1947 was 5·2 per cent. above that for 1946. Deaths of non-civilians registered in each year are excluded from all tables in the Statistical Review, Part I, except Tables 3 and 4 (total deaths registered) and Tables 20, 21A and 25c which give full details of them by sex, age and cause.

Death Rates.—The death rates used in this Review are of several kinds, and are complicated during 1946 and to a slight extent during 1947, by the demobilization of the armed forces which was proceeding during the period.

Crude death rates represent the total numbers of deaths from all causes registered during the year as belonging to the area in question, after correction for transfers to the place of residence of the deceased, per thousand or million of the corresponding estimated population at the middle of the year. The use of the mid-year population in the calculation involves the assumption that the population resident in the area was either stationary or changing at a uniform rate throughout the year. This assumption was not justifiable during 1946 owing to demobilisation, for the estimated civilian population of England and Wales as a whole increased by 1·8 millions in the first half of the year and by 0·8 millions in the second half. The mid-year civilian population was 40,759,000 but the mean population in 1946 used for death rates was 40,595,000 as shown in Table 1 (Part I). In 1947, however, the mean population did not differ appreciably from the mid-year population owing to the increase being fairly uniform throughout the year.

No estimates could be made of the non-civilian populations at risk to die during these years within separate regions and areas, and consequently the crude death rates in Table 17 are civilian rates based on the mean population of 1946 and mid-year population of 1947 in those areas during the year.

For England and Wales as a whole " total " death rates have been published in the Registrar General's Quarterly Returns, the numerators of the rates being the total deaths registered in the country and the denominators the whole population at the mid-year inclusive of non-civilians and merchant seamen, whether at home or abroad. Since deaths occurring outside England and Wales are excluded, whilst the total population includes appreciable numbers at risk to die from acute diseases and violent causes abroad, these are indices rather than true death rates, and are only " total " in the sense defined above.

In the years 1940 to 1947 the " total " and civilian rates were as follows :—

	1940	1941	1942	1943	1944	1945	1946	1947
Civilian death rate per 1,000 mean civilian population...	14·36	13·54	12·31	13·00	12·73	12·61	12·05	12·34
" Total " death rate per 1,000 mid-year total population	13·9	12·8	11·5	11·9	11·6	11·4	11·5	12·0

The " total " rate was at the same level in 1946 as in the two years preceding, but in 1947 it increased slightly.

Civilian death rates, which in 1946 and 1947 are used for all purposes of local statistics, represent the numbers of deaths registered during the year as belonging to the area in question, with deduction of those of non-civilians in each year and corrected for transfers to place of residence, per thousand or million of the corresponding estimated civilian population for the year as given in Table 17. In 1946 these rates were still influenced appreciably by absence in the armed forces of considerable numbers of young adults free from chronic disease, and by consequent overweighting of the total civilian population with older people. In 1943 and 1944 the civilian rate exceeded the " total " rate by 1·1 per 1,000, and in 1945 by 1·2, but in 1946 the excess had diminished to about 0·6 and in 1947 to about 0·3.

Specific death rates relate either to mortality assigned to selected causes or else to mortality amongst groups of persons of selected sex, age or civil condition. Rates of the latter type are, with certain exceptions, usually obtained by dividing the number of deaths registered in the year as being those of persons in the selected group by the estimated number of such persons alive at the mid-year. Exceptions to the use of estimated populations as denominators are the various rates of infant mortality, which are based on the appropriate numbers of live births, and certain death rates connected with child-bearing which are based upon the appropriate numbers of live and still births.

Standardized Mortality Comparisons.

Comparative Mortality Index.—This index has replaced the standardized death rate for purposes of measuring the trend of mortality from all causes, or from a particular cause, over a period of time. It represents the ratio between adjusted death rates of the year in question and of a base year (at present the year 1938), each calculated by weighting the death rates at the various sex-age groups by the mean of the age distributions of the populations living in the two years. If the death rate experienced by an age group x in the year to which the index relates is denoted by m, and the corresponding rate in 1938 by m′, and if r and r′ are the fractions of the populations of all ages falling within that age group in the two years :—

$$\text{C.M.I.} = \Sigma m\,(r + r') \,/\, \Sigma m'\,(r + r')$$

where Σ denotes summation over all the age groups. The methods of calculation were described on pages 7-11 of the Review for 1940-45.

The C.M.I's. for all causes of death are shown in Table 3 for each sex separately and for persons, in decennial periods 1841-50 to 1931-40, in quinquennial periods 1841-45 to 1941-45, and in separate years 1896 to 1947. For separate causes of death they are given in Table 8 for each sex in each of the last ten years, the index for 1938 being always unity ; and for certain important causes the indices for persons are given in Table 9 for years or periods extending as far back as the records allow.*

* As explained on page 11 of the Review for 1940–45 (Text), in the calculation of C.M.I's. for separate causes in years 1940 onwards, the change in procedure in 1940 for selecting the underlying cause of death when more than one cause is certified was at first allowed for by using the conversion ratios ; but the indices in Tables 8 and 9 were later recalculated more exactly from the dual classification of deaths made in 1939, and the revised figures for years 1940 to 1946 appear in Tables 8 and 9 of the 1947 Review, differing slightly from those previously shown.

The **adjusted ratios of male to female mortality**, also shown in Table 3 for all causes, are derived by the same formula as above, but interpreting m′ and r′ as referring to females and m, r as referring to males, each in the year to which the ratio applies. Since the C.M.I's. for each sex have their own unit bases at year 1938, it is possible to compare male with female mortality in any year for particular causes of death in Table 8 by multiplying the ratio between the crude death rates in 1938 by the ratio between the C.M.I's. for the year in question.

The **mortality ratio,** shown in Table 5 for each sex and for persons, each year since 1905 and for periods of years since 1841, is simply the ratio between the C.M.I. of the period specified and that of the period immediately preceding it. As explained on page 8 of the Review for 1940–45, the cumulative product of the M.R's. proceeding forwards from 1939 produces the successive C.M.I's. of years 1939 to 1947 ; and the cumulative product of the reciprocals of the M.R's. proceeding backwards from 1938 likewise produces the successive C.M.I's.

The uses and disadvantages of the **life-table death rate** and **equivalent average death rate** were discussed in the Review for 1940-45 (Text, page 12).

Trend of various Indices for England and Wales since 1901.—The changes in age constitution of the whole population during the period 1901-47 are shown in Table I.

Table I.—Population of Persons in England and Wales by Ages, per 10,000 a all ages, 1901, 1911, 1921, 1931, 1939, 1946 and 1947.

Age	1901 Standard	1911 Census	1921 Census	1931 Census	1939 Mid-year	1946 Mean*	1947 Mean*
0–	1,143	1,069	877	749	690	**764**	**818**
5–	2,099	1,995	1,895	1,635	1,415	**1,294**	**1,298**
15–	1,958	1,805	1,756	1,734	1,592	**1,460**	**1,402**
25–	1,616	1,651	1,520	1,605	1,671	**1,547**	**1,529**
35–	1,228	1,344	1,411	1,368	1,465	**1,575**	**1,570**
45–	892	978	1,167	1,235	1,244	**1,284**	**1,298**
55–	597	637	769	932	1,026	**1,036**	**1,034**
65–	331	377	434	536	643	**718**	**724**
75–	121	126	151	182	225	**280**	**285**
85 and over...	15	18	20	24	29	**42**	**42**
All ages ...	10,000	10,000	10,000	10,000	10,000	**10,000**	**10,000**

* Total population including Armed Forces and Merchant Seamen at home and abroad.

The proportion of children under 15 years of age declined from 32½ per cent. in 1901, to 21 in 1939 and 20½ in 1946, after which it increased slightly to 21 per cent. in 1947. The proportion of persons aged 65 and over increased from 4·7 per cent. in 1901, to 5·2 in 1911, 6·1 in 1921, 7·4 in 1931, 9·0 in 1939 and 10·5 in 1947. The increment of 0·2 per cent. annually to this figure which occurred between 1931 and 1939 still continues.

These changes have been reflected in the divergent trends of the crude and adjusted death rates. Between 1901 and 1911 the crude rate fell from 16·9 per 1,000 persons living to 14·6, or by 13½ per cent., whilst the C.M.I. fell by 15½ per cent. In the next ten years the crude rate declined to 12·1, or by 17 per cent., whilst the C.M.I. fell by 19½ per cent. From 1921 onwards the crude rate has registered no further consistent change disregarding the years of war; but the C.M.I. has fallen from an average of 1·265 in 1920-22 to an average of 0·893 in 1945-47, or by nearly 30 per cent.

In order to understand the behaviour of the indices of civilian mortality in 1946 and 1947 it is necessary to take into account the effects of demobilisation on the age distributions of the male and female civilian populations.

Age	MALES						FEMALES					
	Civilian population (thousands)			Per 1,000 of all ages			Civilian population (thousands)			Per 1,000 of all ages		
	1945	1946	1947	1945	1946	1947	1945	1946	1947	1945	1946	1947
All ages ...	**16,412**	**18,616**	**19,612**	**1,000**	**1,000**	**1,000**	**21,745**	**21,979**	**22,174**	**1,000**	**1,000**	**1,000**
0–... ...	4,454	4,477	4,649	271	240	237	4,299	4,315	4,462	198	196	201
15–... ...	1,142	1,184	1,098	70	64	56	1,444	1,462	1,424	66	67	64
20–... ...	475	762	1,075	29	41	55	1,495	1,560	1,531	69	71	69
25–... ...	1,454	2,672	3,045	89	144	155	3,205	3,305	3,311	147	150	150
35–... ...	2,597	3,142	3,259	158	169	166	3,392	3,403	3,410	156	155	154
45–... ...	2,431	2,502	2,580	148	134	132	2,930	2,947	2,974	135	134	134
55–... ...	2,009	1,992	2,001	122	107	102	2,462	2,427	2,444	113	110	110
65 and over	1,850	1,885	1,905	113	101	97	2,518	2,560	2,618	116	117	118
20–45 ...	4,526	6,576	7,379	276	353	376	8,092	8,268	8,252	372	376	372

The total male civilian populations in 1945, 1946 and 1947 in thousands were 16,412, 18,616 and 19,612, showing an increase of 13·4 per cent. in 1946 and of 5·4 per cent. in 1947. This counteracted the effect on the crude death rate of males of the progressive rise in the proportion of men over 55 in the total population, but it could have no effect on the C.M.I., which is a function of age specific death rates and proportionate age distributions of the year in question and of 1938.

The equivalent average death rate assumes that there was a uniform distribution of population under 65 over the 13 quinquennial age groups, so that in 1946 and 1947 the proportions per 1,000 at all ages are taken as about 208, 69, 69, 139, 139, 139, 139 for males, and as 206, 68, 68, 137, 137, 137, 137 for females in the first seven age groups of the above table. The extent to which this gives too much or too little weight to certain ages can be seen by comparing these figures with the actual proportions.

Table II shows the trends for each sex of (*a*) the crude death rate, (*b*) the life-table death rate, (*c*) the equivalent average death rate at ages under 65, and (*d*) the comparative mortality index. All these rates are derived from civilian deaths and populations from 1940 onwards.

Table II.—Crude Death rates and Standardized Mortality comparisons for each sex, 1901 to 1947.

Year	Crude death rate All ages		Life-Table death rate All ages		Equivalent average rate Under 65		Comparative Mortality Index (1938) All ages	
	M	F	M	F	M	F	M	F
	Rates per 1,000 living						1938 taken as unity	
1901 ...	18·1	15·8	—	—	16·2	13·2	1·764	1·862
1911 ...	15·6	13·7	19·4	18·1	13·6	11·0	1·496	1·568
1921 ...	12·9	11·3	18·0	16·8	10·5	8·5	1·202	1·266
1931 ...	13·0	11·6	17·0	15·9	9·3	7·2	1·127	1·183
1936 ...	12·9	11·4	—	—	8·7	6·4	1·061	1·087
1937 ...	13·2	11·7	16·5*	15·5*	8·8	6·5	1·073	1·100
1938 ...	12·5	10·8	16·3*	15·2*	8·2	5·9	1·000	1·000
1939 ...	13·0	11·3	16·2*	15·1*	8·1	5·8	1·016	1·028
1940 ...	16·1	12·9	17·1*	15·7*	10·0	6·7	1·187	1·156
1941 ...	15·7	11·8	17·1*	15·5*	9·5	6·2	1·096	1·043
1942 ...	14·4	10·7	16·2*	14·8*	8·2	5·4	·967	·916
1943 ...	15·3	11·3	16·2*	14·8*	8·4	5·5	·978	·944
1944 ...	15·3	10·8	16·1*	14·6*	8·2	5·2	·952	·894
1945 ...	15·0	10·8	16·0*	14·5*	7·8	5·0	·920	·875
1946 ...	13·4	10·9	15·5*	14·4*	7·2	4·8	·889	·875
1947 ...	13·5	11·3	15·5*	14·4*	7·2	4·8	·921	·892
	Per cent. of corresponding rate or index in 1911							
1901 ...	116	115	—	—	119	120	118	119
1911 ...	100	100	100	100	100	100	100	100
1921 ...	83	82	93	93	77	77	80	81
1931 ...	83	85	88	88	68	65	75	75
1936 ...	83	83	—	—	64	58	71	69
1937 ...	85	85	85	86	65	59	72	70
1938 ...	80	79	84	84	60	54	67	64
1939 ...	83	82	84	83	60	53	68	66
1940 ...	103	94	88	87	74	61	79	74
1941 ...	101	86	88	86	70	56	73	67
1942 ...	92	78	84	82	60	49	65	58
1943 ...	98	82	84	82	62	50	65	60
1944 ...	98	79	83	81	60	47	64	57
1945 ...	96	79	82	80	57	45	61	56
1946 ...	86	80	80	80	53	44	59	56
1947 ...	87	82	80	80	53	44	62	57

* Estimate from abridged life-table (Appendix "B" on page 312) based on annual rates (for civilians from 1940 onwards).

Comparing the rates of 1946 with those of the preceding year, the crude death rate of males fell from 15·0 to 13·4, this being largely due to demobilisation, whilst that of females was very slightly higher at 10·9 per 1,000. In 1947 both rates increased slightly, to 13·5 and 11·3 respectively. The equivalent average rates at ages under 65 decreased in 1946 for females as well as males, and remained unchanged in 1947. These rates were below any previously recorded, being 7·2 and 4·8 for males and females compared with 8·1 and 5·8 respectively in 1939, the lowest levels attained prior to the war. As will be seen later the increase of female mortality in 1947 took place only at ages 0–5, 15–25, and 65 upwards, whilst other ages registered an improvement ; hence the contrast between the behaviour of the equivalent rate at ages under 65, and that of the other indices which relate to all ages. The life-table death rates (one thousand divided by the expectation of life at birth) showed for each sex 20 per cent. improvement on the corresponding rates of 1911.*

The C.M.I. for males declined by three per cent. in 1946 whilst for females it remained unchanged. In 1947 the male index increased again to the level of 1945, in contrast with the crude rate which scarcely changed. As a result of continuing demobilization the civilian population between ages 20 and 45 increased from 6,576 thousands in 1946 to 7,379 thousands in 1947, and that addition of some 800 thousand men with very low death rate to the population forming the denominator of the crude rate at all ages had the effect of obscuring the increase in mortality which occurred in 1947 amongst men of every age group over 45. The C.M.I. is not affected by such population changes to anything like the same extent.

Quarterly Death rates by Sex and Age.

The numbers of deaths registered in each quarter of the year for decennial periods from 1841 to 1940 and for separate years from 1935 onwards are given in Table 4. They include deaths of non-civilians registered in England and Wales, but the death rates are of civilians from the last quarter of 1939 onwards. The rates are calculated by increasing the appropriate number of deaths in the quarter in the proportion of total days in the year to number of days in that quarter and dividing by the population as used for annual death rates. In Table III such quarterly death rates are shown for five year periods from 1851 onwards and for each year from 1931, and the percentage ratio of each quarter's rate to the annual rate is also shown.

* See Appendix "B", on page 312.

Table III.—Quarterly Death rates in each Quinquennium 1851-1945 and in each year 1931 to 1947, with ratio to yearly rate taken as 100.

	Death rate per 1,000 living				Ratio to yearly rate taken as 100			
	March	June	September	December	March	June	September	December
1851–1855	25·3	22·5	21·0	21·9	111	99	93	96
1856–1860	24·1	21·6	19·6	21·9	111	99	90	100
1861–1865	25·7	22·0	20·4	22·3	114	97	90	99
1866–1870	24·7	21·6	21·5	22·0	110	96	96	98
1871–1875	24·3	21·1	20·4	22·1	110	96	93	100
1876–1880	23·2	20·7	18·8	20·6	112	100	90	99
1881–1885	21·4	19·3	17·6	19·4	110	99	91	100
1886–1890	21·7	18·0	17·0	18·9	115	95	90	100
1891–1895	21·8	18·5	16·4	18·1	117	99	88	97
1896–1900	19·5	16·6	17·5	17·2	110	94	99	97
1901–1905	17·9	15·2	14·9	16·1	112	95	93	101
1906–1910	17·4	14·1	12·6	14·7	118	96	86	100
1911–1915	16·9	13·7	12·7	14·0	118	96	89	98
1916–1920	17·5	13·5	10·9	15·8	122	94	76	110
1921–1925	15·1	11·9	9·6	12·0	124	98	79	98
1926–1930	15·9	11·5	9·4	11·6	131	95	78	96
1931–1935	15·4	11·5	9·6	11·7	128	96	80	98
1936–1940	16·1	11·7	10·0	12·3	129	94	80	98
1941–1945	16·1	12·3	10·2	12·8	125	96	80	100
1931 ...	16·5	11·5	9·6	11·7	134	93	78	95
1932 ...	15·4	11·6	9·7	11·5	128	97	81	96
1933 ...	17·1	10·8	9·4	12·0	139	88	76	98
1934 ...	14·6	11·8	9·6	11·2	124	100	81	95
1935 ...	13·2	12·0	9·8	12·0	113	103	84	103
1936 ...	15·1	11·8	9·7	12·0	125	98	80	99
1937 ...	16·2	11·6	9·7	12·3	131	94	78	99
1938 ...	13·6	11·6	9·9	11·5	117	100	85	99
1939 ...	15·1	11·7	9·9	11·8	125	97	82	98
1940 ...	20·6	11·9	10·8	14·1	143	83	75	98
1941 ...	18·4	14·2	10·1	11·5	136	105	75	85
1942 ...	15·8	12·0	9·8	11·6	128	98	80	94
1943 ...	14·5	11·7	10·1	15·7	112	90	78	121
1944 ...	15·3	12·0	11·0	12·7	120	94	87	100
1945 ...	16·5	11·5	10·0	12·6	131	91	79	100
1946 ...	15·4	11·2	9·7	11·9	128	93	81	99
1947 ...	17·6	11·3	9·2	11·4	143	92	75	93

As was pointed out in the Review for 1940-45, these rates were seriously affected during 1940-41 and 1944-45 by the irregular occurrence of civilian war casualties, thus disturbing the ratios to the yearly rate, and in 1943 there was an influenza epidemic in the December quarter. In 1946 the quarterly distribution conformed to what was usual during 1925-39, when March quarters tended to have a rate about 30 per cent. above and September quarters a rate about 20 per cent. below the annual death rate. In 1947 this was disturbed by an exceptionally cold March quarter, with a death rate of 17·6 per 1,000, exceeding the annual rate by 43 per cent. The true death rate in

the remainder of 1947 was 17 per cent. below that of 1938 and 18 per cent. below that of 1931-35.*

Mortality of each sex.—Table IV shows the death rates of males of different ages expressed in terms of the corresponding female rates taken as 100, and the adjusted percentage ratios of male to female mortality at all ages in quinquennial periods from 1841 and separate years from 1931. The sex-ratios at separate age groups are derived from Table 5 (except in 1911-15 and 1916-20, when rates based on the total male populations have been used in place of civilian rates). The adjusted percentage ratios are one hundred times the unit ratios shown in Table 3, and are calculated by the method explained on page 8 of the Review for 1940-45, Text.

Table IV.—Mortality of Males per cent. of that of Females at Various Ages from 1841-45 onwards. (*See* Table 5).

Year	Adjusted Percentage Ratio of Male to Female Mortality	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	85 and over
1841–1845	110	117	102	92	88	105	95	101	114	111	111	109	106
1846–1850	109	116	103	95	91	104	94	99	113	112	111	109	107
1851–1855	110	116	104	98	90	103	97	102	118	114	112	110	106
1856–1860	110	115	99	96	90	102	96	103	118	115	111	108	107
1861–1865	112	115	102	98	93	105	100	109	122	118	112	109	110
1866–1870	113	115	107	100	94	106	105	113	124	120	115	109	111
1871–1875	115	117	108	100	97	109	109	119	128	121	114	111	110
1876–1880	116	118	107	97	96	108	109	119	129	122	114	112	111
1881–1885	115	118	102	97	96	102	104	117	127	122	116	113	112
1886–1890	116	119	100	97	98	106	107	117	129	122	117	112	114
1891–1895	116	119	98	96	100	108	108	118	128	121	115	111	110
1896–1900	118	118	98	96	106	120	116	122	129	124	117	113	109
1901–1905	119	119	97	95	107	119	118	121	130	128	119	115	110
1906–1910	120	119	97	95	107	121	118	121	129	128	121	115	113
1911–1915	123	120	100	95	111	122	124	126	132	133	124	118	115
1916–1920	128	121	100	92	114	122	124	131	135	137	132	121	111
1921–1925	124	124	104	100	100	113	114	130	132	133	127	119	110
1926–1930	127	125	110	105	106	108	112	134	140	136	130	121	107
1931–1935	128	126	110	100	109	114	106	126	142	139	132	123	113
1936–1940	134	127	115	113	115	120	115	129	147	152	136	130	113
1941–1945	141	126	130	123	128	207	169	147	153	165	143	130	109
1926	126	124	109	100	104	107	112	133	135	134	129	123	111
1927	126	125	109	107	104	110	112	135	137	134	129	120	108
1928	128	126	109	113	108	103	112	130	138	136	130	123	110
1929	126	122	113	100	108	110	111	139	143	134	126	117	103
1930	129	128	110	104	109	112	111	133	144	139	133	121	103
1931	127	128	115	100	108	114	106	129	140	135	132	121	111
1932	127	125	116	108	114	114	110	123	135	137	134	123	110
1933	126	126	110	107	113	114	109	124	141	137	129	122	110
1934	128	124	104	100	109	115	107	124	142	142	132	124	111
1935	130	126	111	100	105	112	107	125	146	143	134	126	112
1936	131	128	117	118	105	112	111	126	142	147	133	127	112
1937	131	127	118	109	117	108	111	128	146	149	133	125	108
1938	134	129	106	118	118	122	116	129	148	150	137	130	112
1939	134	126	131	110	119	113	108	126	147	155	137	131	112
1940	138	129	118	113	119	168	139	141	155	160	136	130	113
1941	141	125	121	121	129	198	163	150	152	163	140	133	107
1942	142	127	128	127	123	197	160	145	150	162	145	133	111
1943	140	125	136	112	125	214	165	143	155	164	141	128	110
1944	143	126	134	129	126	203	175	153	155	169	146	130	112
1945	142	127	134	131	130	227	180	144	154	168	145	128	108
1946	138	130	129	128	130	149	113	127	154	168	144	127	113
1947	139	127	139	128	134	113	109	126	157	175	149	130	121

* Using the formula-Ratio of mean quarterly rates × Ratio of Annual C.M.I's./Ratio of annual rates (see Review for 1940–45 Text, page 15).

During 1940–47 the ratios are calculated from the civilian rates, and are affected by that fact at ages between 15 and 55. In 1946 the effects of civilian selection were still important but in 19 .7 they may be disregarded.

Comparison is made below between the ratios in those years and the average percentage ratios in 1931-33 and 1937-39.

	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	85 and over
1931–33 ...	126	114	105	112	114	108	125	139	136	132	122	110
1937–39 ...	127	118	112	118	114	112	128	147	151	136	129	111
1946	130	129	128	130	149	113	127	154	168	144	127	113
1947	127	139	128	134	113	109	126	157	175	149	130	121

The male excess of mortality is much more pronounced than it was in 1937-39 at ages between 5 and 20, and also between 45 and 75, whilst at other ages, it shows no consistent difference from the position in 1931-33. The reasons for this can be seen only when the death rates from different causes are studied.

Death Rates in Different parts of England and Wales.

Table 17 gives the civilian death rates from all causes per 1,000 estimated population at all ages in each administrative area, and in regions, counties and various aggregates; it shows also the infant mortality rates per 1,000 related live births.

Table 10 gives the death rates per million civilian population from typhoid and paratyphoid fevers, meningococcal meningitis, scarlet fever, whooping cough, diphtheria, tuberculosis (all forms and respiratory only), and measles in each metropolitan borough, county borough and administrative county. The same table shows infant and maternal mortality rates based upon births, and enteritis and diarrhœa rates in children under 2 years of age.

Estimates of local populations according to sex and age could not be made during the war, and consequently no adjustment of local death rates to allow for differences of sex and age constitution of the populations has been possible since 1939. At the end of 1947 the National Register and other sources of information were used to estimate the sex and age composition of the populations resident in administrative areas at that time, and this has made possible the calculation of death rates from certain causes in specific age groups for separate divisions of the country in several tables of this Review.

Statistical Significance of Death Rates.—*See* pp. 23–24 of the Review for 1940–45, Text.

Infant Mortality.

Prior to 1941 infant mortality rates were expressed as the number of deaths at ages under one year per thousand live births registered during the same year. Such rates made no allowance for the time-lag between the occurrence of a birth and its registration, nor for the fact that a proportion of the infants dying during one year had been born during the previous year. When neither the average time-lag nor the number of births in a year is changing greatly, the errors involved by the use of the simple definition are not important. By 1941, however, it had become apparent that the simple definition was unsatisfactory, and since then infant mortality rates have been expressed as deaths per thousand *related* live births. Rates for a number of earlier years have been recalculated to bring them into line with those of more recent years.

Changes in the registration time-lag and in the annual number of births are both liable to create discrepancies between the number of births registered and the number of births occurring in a year. Registrations and occurrences will be equal in any year only if the number of births occurring during the time-lag period at the end of the year equals the number of births during the time-lag period at the end of the previous year. Thus, for example, considering two successive years A and B, if at the end of Year A the time-lag is ten days and there are 1,500 births per day during this period, then 15,000 births that occur in Year A will not be registered until Year B. If at the end of Year B the time-lag has fallen say to eight days, then with no change in birth rate, 12,000 births occurring in Year B will not be registered in that year. As a result registrations during Year B will exceed the births occurring in that year by 3,000. If, however, by the end of Year B births have increased, say to 2,000 per day, then 16,000 births occurring in Year B will fail to be registered during that year, and birth occurrences will exceed birth registrations by 1,000.

The registration time-lag of births has fallen greatly since 1939. In the first quarter of that year the average interval between the occurrence of a birth and its registration was almost 32 days, but by the end of 1947 it had fallen to 7·5 days. Quarterly average intervals in days in 1939, 1946 and 1947 were as follows :—

Quarter	1939	1946	1947
March	31·9	11·0	9·1
June	30·9	9·4	8·2
September ...	29·7	8·8	8·3
December... ...	28·4	8·6	7·5

During these years, as Table V shows, there have been substantial changes in numbers of births, and these changes together with the diminishing time-lag have combined to produce the discrepancies between registrations and occurrences shown in the table. Accordingly, related births, as used since 1941 for the calculation of infant mortality rates, refer not to registrations but to occurrences.

Although it sufficed in the years when annual births were not varying much to consider only the births occurring in the same year as the deaths, since the number of these births would differ little from those in the previous year, the term " related births " takes cognisance also of some of the births that occurred in the previous year. The method by which the number of related births is estimated depends on the varying probability that children dying at different ages under one year were born during the same or in the previous year and has been fully described on page 28 of the 1940-45 Text.* Thus the number of related live births corresponding to deaths in Year B at ages under four weeks can be calculated by adding to the total live births occurring in Year B a quantity equal to 0·452 times the excess of the births occurring in December of Year A over births occurring in December of Year B. The factor 0·452 is obtained as follows :—A proportion of deaths under four weeks in Year B must have related to children born in the last 28 days of December of Year A, and similarly a proportion of children born in the last 28 days of December of Year B and dying under the age of four weeks will not die until the next year (Year C). Assuming that of the children born in the last 28 days of December

* See also Corrigenda on page vi.

who die under the age of four weeks half do so during December and half in the first 28 days of the next year, it follows that the births that are to be related to " under four weeks " deaths in Year B are :—

Births occurring in Year B *plus* $\frac{1}{2}$ (births occurring in the last 28 days of December of Year A) *minus* $\frac{1}{2}$ (births occurring in the last 28 days of December of Year B).

$= \text{births in Year B} + \frac{1}{2} \times \frac{28}{31}$ (births in December of Year A – births in December of Year B)

= births in Year B + 0·452 (births in December of Year A – births in December of Year B).

Adjusting factors for infant deaths at other ages during the first year of life can be calculated in a similar way and were given in the above-mentioned section of the 1940-45 Review where, in addition, the method of estimating comparable infant mortality rates by sex, legitimacy, geographical regions and by quarters of the year was described.

Infant mortality rates since 1939 are shown in Table V. The rates based on births registered in the same year and on related births show dissimilar trends between 1946 and 1947, the former rising from 40·9 to 41.6, while the latter fell from 42·9 to 41·4. This discrepancy illustrates the necessity for calculating the rates on the basis of related births if false conclusions are to be avoided. The more reliable method indicates that the infant mortality rate continued to decline during both years.

Table V.—Deaths at Ages under One year and Live Births by Sex, Legitimacy and Quarter of Year, 1939 to 1947.

		1939	1940	1941	1942	1943	1944	1945	1946	1947
Number of deaths under 1 year registered		**31,190**	**33,892**	**34,550**	**32,258**	**33,431**	**33,455**	**31,959**	**33,541**	**36,849**
Legitimate ...	M	16,590	18,456	18,505	17,044	17,484	17,135	16,063	17,526	19,695
	F	12,269	13,317	13,622	12,553	12,938	12,727	11,791	12,677	14,375
Illegitimate ...	M	1,280	1,237	1,407	1,529	1,708	2,027	2,324	1,932	1,530
	F	1,051	882	1,016	1,132	1,301	1,566	1,781	1,406	1,249
March quarter ...		10,035	11,948	11,062	9,771	10,067	10,152	10,676	9,637	12,561
June quarter		7,897	7,713	8,787	7,868	8,106	7,983	7,227	7,657	9,195
September quarter ...		6,408	6,371	6,470	6,821	6,851	7,376	6,429	7,100	7,141
December quarter ...		6,850	7,860	8,231	7,798	8,407	7,944	7,627	9,147	7,952
Ages under 4 weeks ...		17,401	17,503	16,746	17,676	17,251	18,218	16,910	19,857	20,102
Ages 4 weeks–3 months		4,904	5,513	6,455	5,566	5,995	5,923	5,670	5,571	6,222
Ages 3–6 months ...		4,350	4,948	5,493	4,723	5,319	5,053	4,931	4,486	5,492
Ages 6–9 months ...		2,724	3,465	3,317	2,651	3,016	2,703	2,737	2,347	3,232
Ages 9–12 months ...		1,811	2,463	2,539	1,642	1,850	1,558	1,711	1,280	1,801
Number of live births registered		**619,352**	**607,029**	**587,228**	**654,039**	**683,212**	**744,843**	**685,273**	**819,894**	**886,820**
Number of live births occurring		**614,479**	**590,120**	**579,091**	**651,503**	**684,334**	**751,478**	**679,937**	**820,719**	**881,028**
Legitimate ...	M	302,584	289,395	281,130	316,889	330,062	358,893	317,321	394,618	429,689
	F	286,325	275,092	266,903	298,147	310,563	337,412	299,196	372,182	404,734
Illegitimate ...	M	13,022	13,220	15,924	18,871	22,736	28,745	32,751	27,681	23,901
	F	12,548	12,413	15,134	17,596	20,973	26,428	30,669	26,238	22,702
March quarter ...		152,729	153,659	143,003	156,318	171,853	183,840	171,045	179,869	239,627
June quarter		163,126	153,138	143,080	168,310	178,904	200,548	174,968	203,536	233,867
September quarter ...		155,458	149,143	148,305	166,840	171,415	183,713	169,481	214,224	214,308
December quarter ...		143,166	134,180	144,703	160,035	162,162	183,377	164,443	223,090	193,224
Infant mortality rates :—										
Per 1,000 registered births in same year		50·4	55·8	58·8	49·3	48·9	44·9	46·6	40·9	41·6
Per 1,000 related births ...		50·6	56·8	60·0	50·6	49·1	45·4	46·0	42·9	41·4

Although the rate of 41·4 in 1947 was the lowest so far recorded for England and Wales and was little more than two-thirds that of 1937—57·7 per thousand—several other countries had lower rates in 1947, and some recorded greater improvement :—

	1937	1947	Percentage decrease
Iceland	33	22	33
New Zealand	31	25	19
Sweden	45	25	44
Australia	38	29	24
U.S.A.	54	32	41
Netherlands	38	33	13
Union of South Africa (Europeans)	57	35	39
Switzerland	47	39	17
Denmark	66	40	39
England and Wales	58	41	29

Some countries whose rates in 1947 exceeded those of England and Wales were :—

	1937	1947	Percentage decrease
England and Wales	58	41	29
Canada	76	45	41
Northern Ireland	77	53	31
Scotland	80	56	30
Finland	68	59	13
France	65	66	+ 2
Eire	73	67	8
Belgium	83	69	17
Italy	109	82	25
Portugal	151	108	28

It is evident from these two tables that both in the absolute level of its infant mortality rate and in the relative improvement since 1937 England and Wales has occupied an average position, neither high nor low, among the countries listed above.

Table VI gives annual infant mortality rates from diarrhœa, from respiratory diseases and influenza, and from other causes since 1861-65, and quarterly infant mortality rates (all causes) since 1871-75. Up to 1901–05 the quarterly rates followed an established pattern with the highest mortality during the September quarter and with the March and December quarters sharing second place without any consistent difference between them. During the next ten years the rates for the March, September and December quarters were almost equal. In 1916–20 the March quarter emerged with easily the highest rate and since then has remained in that position, the September quarter

Table VI.—Average Rates of Infant Mortality by Quarters and Average Annual Rates from Diarrhœa and Other Causes, in Quinquennial Periods 1861-1945 and in each Year 1931 to 1947.

Year	Annual average rates				Quarterly average rates			
	All causes	Diarrhœal diseases	Respiratory diseases and influenza	Other causes	March	June	September	December
1861–1865	151	16	25	110	—	—	—	—
1866–1870	157	21	26	110	—	—	—	—
1871–1875	153	20	27	106	151	133	180	149
1876–1880	145	17	30	98	147	128	161	143
1881–1885	139	15	27	97	140	125	152	139
1886–1890	145	18	29	98	146	125	163	147
1891–1895	151	21	31	99	151	132	169	151
1896–1900	156	32	28	96	142	124	212	148
1901–1905	138	24	26	88	137	113	162	140
1906–1910	117	19	22	76	124	98	120	128
1911–1915	110	20	21	69	119	91	120	109
1916–1920	90	9	21	60	116	83	75	91
1921–1925	76	8	18	50	94	70	62	77
1926–1930	68	7	16	45	91	62	51	67
1931–1935	62	6	14	42	83	58	47	60
1936–1940	55	5	11	39	73	53	43	53
1941–1945	50	5	11	34	64	47	40	48
1931 ...	66	5	17	44	94	59	46	64
1932 ...	64	6	14	44	87	61	49	61
1933 ...	63	6	14	43	84	54	49	64
1934 ...	59	5	11	43	81	58	46	54
1935 ...	57	5	11	41	68	58	45	58
1936 ...	59	6	12	41	81	56	44	54
1937 ...	58	5	12	41	72	57	44	58
1938 ...	53	5	10	38	69	50	42	49
1939 ...	51	4	9	38	66	50	41	46
1940 ...	57	4	13	40	79	51	42	55
1941 ...	60	5	14	41	77	61	45	57
1942 ...	51	5	10	36	65	49	42	48
1943 ...	49	5	11	33	60	47	40	50
1944 ...	45	5	9	31	58	42	40	43
1945 ...	46	5	10	31	60	41	37	45
1946 ...	43	4	8	31	56	40	35	43
1947 ...	41	5	8	28	55	40	32	38

Note.—Rates are based on registered births from 1861 to 1925, and on related births from 1926 to 1947.

consistently having the lowest rates. The change in the September quarter from the position of highest to lowest mortality has been brought about by the decline since 1911–15 in the deaths from diarrhœa. Since 1931, however, annual infant mortality rates from diarrhœa have not changed but deaths from respiratory infections have decreased by one-half.

Table VII.—Age Distribution of Infant Mortality, 1881 to 1947, Rates per 1,000 Live Births.

(Based on related births from 1926 onwards)

Year	Days		Weeks				Months					Total under one year
	0–1	1–7	0–1	1–2	2–3	3–4	Total under four weeks	Four weeks to 3 months	3–6	6–9	9–12	
1881–1885	—	—	—	—	—	—	67		28	44		139
1886–1890	—	—	—	—	—	—	69		30	46		145
1891–1895	—	—	—	—	—	—	74		31	46		151
1896–1900	—	—	—	—	—	—	74		34	48		156
1901–1905	—	—	—	—	—	—	70		28	40		138
1906–1910	11·5	13·0	24·5	5·8	5·7	4·2	40·2	22·8	22·0	17·3	14·8	117·1
1911–1915	11·4	12·7	24·1	5·7	5·3	3·9	39·0	20·2	19·6	15·9	14·1	108·7
1916–1920	11·0	12·4	23·4	5·6	4·7	3·4	37·0	16·5	14·6	12·0	10·8	90·9
1921–1925	10·4	11·3	21·7	5·0	3·9	2·8	33·4	12·8	11·3	9·2	8·3	74·9
1926–1930	10·3	11·5	21·8	4·3	3·2	2·4	31·8	10·8	9·5	8·0	7·4	67·6
1931–1935	10·7	11·7	22·4	3·9	2·9	2·2	31·4	9·9	8·5	6·5	5·6	61·9
1936–1940	10·4	11·2	21·5	3·4	2·5	1·8	29·2	8·8	7·8	5·4	4·0	55·3
1941–1945	9·3	9·5	18·7	3·2	2·3	1·7	26·0	8·9	7·7	4·4	2·8	49·8
1906	11·8	13·2	25·0	6·1	6·2	4·6	41·9	25·7	27·0	20·7	17·2	132·5
1907	11·3	13·1	24·4	6·0	5·9	4·5	40·7	23·3	21·3	17·3	15·1	117·6
1908	11·5	12·8	24·3	5·9	5·8	4·3	40·3	24·2	23·6	17·7	14·6	120·4
1909	11·6	13·2	24·7	5·7	5·3	4·0	39·8	20·4	19·2	15·6	13·8	108·7
1910	11·5	12·5	24·1	5·4	5·1	3·8	38·5	20·0	18·8	15·0	13·2	105·4
1911	11·6	12·7	24·3	6·0	6·0	4·5	40·6	24·7	25·9	20·6	17·4	129·2
1912	11·3	12·9	24·2	5·6	5·0	3·7	38·4	17·7	14·9	12·5	11·4	94·7
1913	11·8	12·7	24·5	5·8	5·4	3·9	39·5	20·3	19·8	15·7	13·6	108·9
1914	11·4	12·7	24·1	5·5	5·0	3·9	38·5	19·3	18·7	15·0	13·0	104·4
1915	10·9	12·5	23·4	5·7	5·0	3·7	37·7	18·6	18·2	16·0	15·2	105·8
1916	10·9	12·3	23·2	5·6	4·9	3·4	36·9	16·9	15·2	11·7	10·3	91·1
1917	11·0	12·4	23·4	5·6	4·8	3·4	37·1	16·9	15·0	11·6	10·6	91·1
1918	11·1	12·1	23·2	5·5	4·6	3·4	36·6	17·1	16·1	14·4	13·7	97·9
1919	12·2	13·7	25·9	6·1	4·9	3·6	40·4	16·4	14·4	11·8	10·3	93·2
1920	10·4	11·5	21·9	5·3	4·6	3·3	35·0	15·5	13·0	11·0	10·0	84·5
1921	10·8	11·6	22·4	5·4	4·5	3·0	35·2	14·7	13·7	9·7	7·8	81·2
1922	10·4	11·6	22·0	5·2	4·1	2·8	33·9	12·4	10·6	9·2	8·6	74·7
1923	10·2	10·9	21·1	4·6	3·6	2·6	31·9	11·4	10·0	8·3	7·6	69·2
1924	10·6	11·2	21·8	4·8	3·8	2·6	33·0	12·4	10·8	9·3	8·8	74·2
1925	10·1	11·1	21·2	4·7	3·7	2·7	32·3	12·5	11·2	9·4	9·0	74·5
1926	10·0	11·3	21·3	4·6	3·6	2·5	31·8	11·6	10·3	8·5	7·5	69·8
1927	10·5	11·6	22·1	4·3	3·4	2·5	32·2	10·6	9·5	8·3	7·8	68·5
1928	10·4	11·2	21·6	4·1	3·0	2·4	31·1	10·7	9·3	7·4	6·8	65·3
1929	10·4	11·9	22·2	4·6	3·3	2·6	32·8	11·5	10·6	9·8	9·2	73·9
1930	10·4	11·6	22·0	3·8	2·9	2·2	30·9	9·7	7·9	6·1	5·6	60·2
1931	10·4	11·7	22·1	4·0	3·1	2·4	31·5	10·8	9·2	7·6	6·6	65·7
1932	10·6	11·8	22·4	3·8	3·0	2·4	31·5	10·8	9·0	7·1	6·1	64·5
1933	11·0	11·8	22·9	4·0	3·1	2·2	32·1	9·8	8·6	6·5	5·7	62·7
1934	10·9	11·8	22·7	3·9	2·8	2·0	31·4	8·9	7·7	6·0	5·3	59·3
1935	10·7	11·3	22·0	3·7	2·7	2·0	30·4	9·1	7·7	5·5	4·3	57·0
1936	10·7	11·3	21·9	3·5	2·7	2·0	30·2	9·3	8·3	6·0	4·9	58·7
1937	10·8	11·2	22·0	3·5	2·5	1·8	29·7	9·4	8·3	5·9	4·4	57·7
1938	10·3	10·8	21·1	3·1	2·3	1·7	28·3	8·2	7·3	5·0	4·0	52·8
1939	10·3	10·9	21·2	3·2	2·2	1·7	28·3	7·9	7·0	4·4	2·9	50·6
1940	9·8	11·5	21·3	3·7	2·6	2·0	29·6	9·3	8·2	5·7	4·0	56·8
1941	10·1	10·6	20·7	3·6	2·6	2·1	29·0	11·3	9·7	5·8	4·3	60·0
1942	9·6	10·0	19·6	3·5	2·4	1·8	27·2	8·7	7·5	4·4	2·8	50·6
1943	9·1	9·2	18·3	3·1	2·2	1·6	25·2	8·8	7·8	4·5	2·8	49·1
1944	8·8	8·8	17·5	3·1	2·2	1·6	24·4	8·0	7·0	3·8	2·3	45·4
1945	9·0	9·0	18·0	3·1	2·0	1·7	24·8	8·2	7·0	3·8	2·3	46·0
1946	8·7	9·1	17·8	3·2	2·0	1·5	24·5	7·1	6·1	3·3	1·9	42·9
1947	7·8	8·7	16·5	2·9	1·9	1·4	22·7	6·9	6·0	3·6	2·1	41·4

Table VII.—*continued.*

Year	Days		Weeks				Months					Total under one year
	0–1	1–7	0–1	1–2	2–3	3–4	Total under four weeks	Four weeks to 3 months	3–6	6–9	9–12	
Rates in terms of those of 1926–30 taken as 1,000.												
1926–1930	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1931–1935	1,039	1,017	1,028	907	906	917	987	917	895	813	757	916
1936–1940	1,010	974	986	791	781	750	918	815	821	675	541	818
1941–1945	903	826	858	744	719	708	818	824	811	550	378	737
1931	1,010	1,017	1,014	930	969	1,000	991	1,000	968	950	892	972
1932	1,029	1,026	1,028	884	938	1,000	991	1,000	947	888	824	954
1933	1,068	1,026	1,050	930	969	917	1,009	907	905	812	770	927
1934	1,058	1,026	1,041	907	875	833	987	824	811	750	716	877
1935	1,039	983	1,009	860	844	833	956	843	811	688	581	843
1936	1,039	983	1,005	814	844	833	950	861	874	750	662	868
1937	1,049	974	1,009	814	781	750	934	870	874	738	595	854
1938	1,000	939	968	721	719	708	890	759	768	625	541	781
1939	1,000	948	972	744	688	708	890	731	737	550	392	749
1940	951	1,000	977	860	812	833	931	861	863	712	541	840
1941	981	922	950	837	812	875	912	1,046	1,021	725	581	888
1942	932	870	899	814	750	750	855	806	789	550	378	749
1943	883	800	839	721	688	667	792	815	821	562	378	726
1944	854	765	803	721	688	667	767	741	737	475	311	672
1945	874	783	826	721	625	708	780	759	737	475	311	680
1946	845	791	817	744	625	625	770	657	642	413	257	635
1947	757	757	757	674	594	583	714	639	632	450	284	612

In Table VII the changes in mortality at three stages of the first year are shown from 1881–1905 and at nine stages thereafter to 1947. During 1947 out of each thousand related live births, eight children died on the first day of life, and nine more during the first week. A further six died in the next three weeks, yielding altogether 23 deaths per thousand in the first four weeks. 13 children died between the age of four weeks and six months and six more between six and twelve months. The proportionate distribution of mortality under one year of age in 1906–10, 1936–40, 1946, and 1947 is shown below.

Year	Days		Weeks				Months					Total under one year
	0–1	1–7	0–1	1–2	2–3	3–4	Total under four weeks	Four weeks to 3 months	3–6	6–9	9–12	
1906–10	9·8	11·1	20·9	5·0	4·9	3·6	34·3	19·5	18·8	14·8	12·6	100
1936–40	18·8	20·2	38·9	6·1	4·5	3·3	52·8	15·9	14·1	9·8	7·2	100
1946	20·3	21·2	41·5	7·5	4·7	3·5	57·1	16·6	14·2	7·7	4·4	100
1947	18·8	21·0	39·9	7·0	4·6	3·4	54·8	16·7	14·5	8·7	5·1	100

The distributions in 1946 and 1947 varied little from those in 1936–40, but comparison with 1906–10 reveals some noteworthy changes. Deaths during the first seven days increased in relative importance and in 1947 constituted 40 per cent. of all infant deaths compared with 21 per cent. in 1906–10. The proportion dying during the second week increased from five per cent. in 1906–10 to seven per cent. in 1947. But at each period after the second week the proportion of deaths was less in 1947 than in 1906–10 and at 9–12 months there were only five per cent. of infant deaths in 1947 compared with almost 13 per cent. in 1906–10.

The lower part of Table VII expresses the rates for each year in terms of those of 1926–30 and shows that the greatest relative decline in infant mortality since 1926–30 has been during the later months of the first year. Percentage reductions from one period to another from 1926–30 onwards are indicated in the table below :—

Year	Days		Weeks				Months					Total under one year
	0–1	1–7	0–1	1–2	2–3	3–4	Total under four weeks	Four weeks to 3 months	3–6	6–9	9–12	
1926–30 to 1936–40 ...	+1	−3	−1	−21	−22	−25	−8	−18	−18	−32	−46	−18
1936–40 to 1941–45 ...	−11	−15	−13	−6	−8	−6	−11	+1	−1	−19	−30	−10
1941–45 to 1947 ...	−16	−8	−12	−9	−17	−18	−13	−22	−22	−18	−25	−17
1926–30 to 1947 ...	−24	−24	−24	−33	−41	−42	−29	−36	−37	−55	−72	−39

Between 1926–30 and 1936–40 improvement was greatest during the second six months ; there was little improvement for the first week and none for the first day. Between 1936–40 and 1941–45, on the other hand, though improvement was again greatest at 6–12 months, there was also a substantial fall in the mortality of the first week of life. Compared with 1941–45 the rates in 1947 showed decreases at each age, most pronounced (25 per cent.) at 9–12 months, and least (8 per cent.) at 1–7 days. Thus since 1926–30, whereas the rates in the second six months have fallen consistently, at younger ages a temporary lag in the decline occurred first at under one week, then at four weeks to six months, and latterly at one day to two weeks, but at no age has there been any permanent failure of the rate to decline.

The **neonatal death rate** (deaths under four weeks per thousand related live births) was 24·5 in 1946 and 22·7 in 1947, the latter representing a decrease of 29 per cent. since 1926–30 and of 13 per cent. since 1941–45. This compares with decreases of 39 per cent. and 17 per cent. in total infant mortality during the same periods. During the 30 years from 1906 to 1936 the neonatal mortality rate fell from 41·9 to 30·2, an average annual decline of 1·1 per cent., while in the next 11 years to 1947 it fell to 22·7 or by 2·6 per cent. per annum. Between 1941 and 1947 the annual average decrease was 4·0 per cent. compared with 5·2 per cent. per annum for total infant mortality. Thus the rate of decline of neonatal mortality has recently undergone a notable acceleration and it no longer lags far behind total infant mortality in the rapidity of its fall.

The neonatal mortality rate in England and Wales in 1937, 1946 and 1947 compares with rates in other countries as follows :—

Country	1937	1946	1947
England and Wales ...	28·6	23·5	22·3
U.S.A.	31·3	24·0	22·3
Australia	26·3	21·2	20·5
Canada	34	27·2	25·9
New Zealand	22·2	19·1	17·7

Stillbirths and neonatal deaths have much in common, both depending largely on factors that operate before and during birth. Table VIII shows death rates at ages under four weeks and stillbirth rates separately and

Table VIII.—Numbers of Stillbirths and Neonatal Deaths and rates per 1,000 Live and Stillbirths, 1928–1947.

Year	Stillbirths		Neonatal deaths (under 4 weeks)		Combined rate per 1,000 live and still-births
	Number	Rate	Number	Rate	
1928	27,580	40·1	20,513	29·8	69·9
1929	26,847	40·0	21,136	31·5	71·5
1930	27,577	40·8	20,060	29·7	70·5
1931	26,933	40·9	19,966	30·3	71·2
1932	26,471	41·3	19,388	30·3	71·6
1933	25,084	41·4	18,688	30·9	72·3
1934	25,209	40·5	18,711	30·0	70·5
1935	25,435	40·7	18,192	29·1	69·8
1936	25,045	39·7	18,254	29·0	68·7
1937	24,806	39·0	18,168	28·6	67·6
1938	24,729	38·3	17,572	27·2	65·5
1939*	24,320	38·1	17,401	27·2	65·3
1940	22,779	37·2	17,503	28·6	65·7
1941	20,876	34·8	16,746	27·9	62·7
1942	22,383	33·2	17,676	26·2	59·4
1943	21,262	30·1	17,251	24·4	54·6
1944	21,306	27·6	18,218	23·6	51·1
1945	19,333	27·6	16,910	24·2	51·8
1946	22,915	27·2	19,857	23·5	50·7
1947	21,795	24·1	20,102	22·3	46·4

* The births assigned to successive calendar years are the numbers registered up to 1938 inclusive and the numbers of occurrences from 1939.

combined since 1928, the former being calculated per thousand live and still births so as to be consistent with the stillbirth rates and differing therefore from the neonatal rates in Table VII. The stillbirth rate fell from 38·3 in 1938 to 24·1 in 1947—*i.e.*, by 37 per cent., while the neonatal death rate dropped from 27·2 to 22·3—*i.e.*, by 18 per cent. The combined rate was 65·5 in 1938 and 46·4 in 1947, a decrease of 29 per cent. Between 1945 and 1947 the percentage declines have been for stillbirths 13, for neonatal mortality 8 and for the combined rate 10. From 1927, when the registration of stillbirths was instituted, until 1936 the stillbirth rate showed no tendency to decline, thus resembling neonatal mortality, but since then it has fallen progressively. Further details about stillbirths will be found in Volume II (Civil) of this Text.

Distribution of Infant Mortality.

The distribution of infant mortality rates among the twelve Geographical Regions in 1946 and 1947 is shown in Table IX (for the constitution of these regions *see* page 54). The regional rates have been corrected for changing birth rate and time-lag in registration on the assumption that the effects of these were the same in each region as in England and Wales as a whole. During the two years the region with the highest infant mortality was North IV with a rate of 56·3 in 1946 and 54·7 in 1947. Following closely upon this were the three other North regions and the two regions of Wales. The lowest rates were recorded in the South East, 34·5 in 1946, 32·7 in 1947 (32·2 in 1947 in Greater London).

Table IX. –Distribution of Infant Mortality, 1946 and 1947.

	1946				1947			
	Deaths per 1,000 related births			Mortality per cent. of that in England and Wales	Deaths per 1,000 related births			Mortality per cent. of that in England and Wales
	Males	Females	Both Sexes	Both Sexes	Males	Females	Both Sexes	Both Sexes
England and Wales	**48·3**	**37·1**	**42·9**	**100**	**46·3**	**36·2**	**41·4**	**100**
South East	38·9	29·9	34·5	80	36·5	28·7	32·7	79
Greater London	39·2	29·9	34·7	81	35·6	28·6	32·2	78
Remainder of South East	38·5	29·7	34·2	80	37·7	28·9	33·4	81
North	57·5	45·1	51·5	120	56·6	44·4	50·7	122
North I	59·5	46·2	53·0	124	53·5	44·1	48·9	118
North II	51·9	41·0	46·6	109	53·8	40·3	47·2	114
North III	50·1	37·6	44·0	103	52·1	39·8	46·1	111
North IV	62·3	49·9	56·3	131	60·8	48·1	54·7	132
Midland	50·8	38·5	44·9	105	46·2	35·6	41·1	99
Midland I	51·9	39·2	45·7	107	45·6	34·5	40·2	97
Midland II	48·8	37·2	43·2	101	47·5	37·9	42·9	104
East	40·8	29·9	35·5	83	39·4	32·2	35·9	87
South West	43·8	33·7	38·9	91	41·5	29·5	35·7	86
Wales	54·2	39·7	47·1	110	54·5	43·4	49·1	119
Wales I	54·6	41·5	48·2	112	55·0	44·5	49·9	121
Wales II	53·3	34·6	44·2	103	53·1	40·4	46·9	113
County boroughs*	57·1	43·7	50·6	118	55·8	43·7	49·9	121
Other urban districts* ...	47·4	36·7	42·2	98	45·5	34·7	40·3	97
Rural districts*	43·8	33·6	38·8	90	41·6	33·2	37·5	91
Greater London Administrative County ...	45·8	34·2	40·2	94	38·5	29·9	34·3	83
Outer Ring	34·5	26·9	30·8	72	33·6	27·6	30·6	74

*Excluding Greater London.

There is no reason to suppose that the average crude infant mortality rates in 1937–39 differed appreciably from those based on " related " births, and the table below shows the percentage decreases between 1937–39 and 1947 on that assumption.

South East... ...	28	Midland ...	24	England and Wales ...	23
Greater London...	34	Midland I ...	26	County boroughs* ...	19
Remainder of S.E.	19	Midland II ...	18	Other urban districts*	22
North	19	East	20	Rural districts* ...	22
North I	27	South West ...	21	Greater London :	
North II ...	23	Wales	18	Admin. County ...	37
North III ...	18	Wales I ...	17	Outer Ring ...	30
North IV ...	15	Wales II ...	19		

* Excluding Greater London.

The greatest regional reduction was in Greater London with 34 per cent. decrease while in the amalgamated North regions and in Wales reductions amounted only to 19 and 18 per cent. Rates for the main regions expressed as percentages of the rates for England and Wales in 1937–39 and 1947 were:—

	England and Wales	South East	South West	East	Midland	Wales	North
1937-39 ...	100	85	85	84	101	112	117
1947 ...	100	79	86	87	99	119	122

The relative positions among the regions have remained almost unchanged. It is unsatisfactory, however, that the two regions, Wales and North, which have persistently had very high rates are the two regions that show the smallest relative reductions since 1937–39. As a result the disparity between the rates

for these two regions and for the rest of the country has become greater. In 1937–39 the infant mortality rate of the North region was 37 per cent. higher than that of the South East ; in 1946 it was 49 per cent. and in 1947 55 per cent. higher. If the infant mortality rate in England and Wales is to be brought down rapidly to its lowest attainable level the factors responsible for the persistently high rates in the North of England and in Wales must be identified, combated and overcome.

Conspicuous among the reductions since 1937–39 is that of 37 per cent. in the Administrative County of London. Excepting 1939–41, infant mortality in this area from 1934 to 1945 was above the national average, but was 6 per cent. below in 1946 and 17 per cent. below in 1947. On the other hand, the average rate for the towns comprising the Outer Ring of Greater London has invariably been well below the national average, and was 28 and 26 per cent. below in 1946 and 1947 respectively.

The annual excess of the rates in county boroughs over rural districts is shown in Table X. In 1946 and 1947 the excess was 31 and 32 per cent. compared with 26 per cent. in 1936–39. The rates in 1947 in county boroughs had fallen to 79 per cent. of the 1936–39 rate, in other urban districts to 77 per cent. and in the rural districts to 76 per cent. There was little difference, therefore, in the degree of improvement recorded by the three different types of area. On the other hand, the rate for 1947 in the Administrative County of London was only 59 per cent. of that for 1936–39.

Table X.—Infant Mortality rates in London and in Urban and Rural Aggregates and percentage excess in the County Boroughs compared with the Rural Districts, 1911-14 and 1936-47.

Year	England and Wales	London Admin. County	County Boroughs*	Other Urban Districts*	Rural Districts*	Per Cent. Excess in County Boroughs over Rural Districts
1936 ...	59	66	66	55	53	+25
1937 ...	58	60	66	55	50	+32
1938 ...	53	58	60	50	47	+28
1939 ...	51	48	58	49	47	+23
1940 ...	57	49	66	56	51	+29
1941 ...	60	58	74	57	51	+45
1942 ...	51	51	60	49	44	+36
1943 ...	49	51	57	48	42	+36
1944 ...	45	51	50	45	41	+22
1945 ...	46	43	54	46	40	+35
1946 ...	43	40	51	42	39	+31
1947 ...	41	34	50	40	38	+32
Average Rates						
1911–1914†	110	108	125	107	90	+39
1931–1935	62	63	71	60	55	+29
1936–1939	55	58	63	52	50	+26
1940–1942	56	52	66	54	49	+35
1943–1945	47	48	54	46	41	+32

* Outside Greater London.

† 1911–1914 based on registered births. All other rates based on related live births.

Tables XI and XII compare rates in successive periods since 1926–30 by class of area and by age at death. Relative improvement in neonatal mortality (deaths under four weeks) since 1926–30 has been greatest in the smaller urban districts and least in Greater London. By contrast, at each age above four weeks Greater London has shown most improvement. From four weeks to six months the county boroughs have recorded the least improvement but at

Table XI. Infant Mortality rates at various stages of Infancy in different classes of area, 1926-47.

Year	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts
	Under 4 weeks				4 weeks to 3 months				3–6 months			
1926–1930...	25·21	34·35	33·37	31·84	9·68	12·87	10·40	9·36	9·81	12·01	8·55	7·02
1931–1935...	25·42	33·80	32·69	31·41	9·49	11·73	9·13	8·31	9·34	10·40	7·22	6·01
1936–1939...	23·57	31·55	29·86	29·62	8·59	10·20	7·88	7·41	8·85	9·49	6·37	5·44
1940–1942...	25·49	30·94	28·60	27·31	7·98	12·36	9·06	7·95	7·45	11·27	7·66	6·10
1943–1945...	22·44	26·35	25·10	23·66	7·01	10·26	8·11	6·65	6·55	9·20	6·77	5·46
1946	20·86	26·95	24·57	23·71	5·33	9·13	6·73	6·10	4·50	7·86	5·95	4·67
1947	18·33	24·82	23·20	22·65	4·85	9·35	6·39	5·56	4·56	8·36	5·36	4·52
	6–9 months				9–12 months				Total under 1 year			
1926–1930...	8·06	10·11	7·69	5·97	7·09	9·75	7·08	5·42	59·85	79·09	67·09	59·61
1931–1935...	6·53	8·25	5·75	4·80	5·25	7·21	5·05	4·18	56·03	71·39	59·84	54·71
1936–1939...	5·99	6·58	4·56	3·69	4·06	4·88	3·57	3·34	51·06	62·70	52·24	49·50
1940–1942...	4·37	6·89	4·91	4·07	2·78	4·78	3·54	3·14	48·07	66·24	53·77	48·57
1943–1945...	3·57	4·91	3·87	3·19	2·28	2·79	2·35	2·18	41·85	53·50	46·20	41·13
1946	2·64	4·36	3·11	2·63	1·37	2·29	1·84	1·71	34·70	50·59	42·20	38·82
1947	2·83	4·74	3·32	2·88	1·61	2·65	1·98	1·91	32·18	49·92	40·25	37·52

* Excluding Greater London.

Table XII.—Infant Mortality at various stages of Infancy in different classes of area, 1931-47, in terms of the corresponding rate in 1926-30 taken as 1,000.

Year	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts	Greater London	County* Boroughs	Other Urban* Districts	Rural* Districts
	Under 4 weeks				4 weeks to 3 months				3–6 months			
1926–1930...	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1931–1935...	1,008	984	980	986	980	911	878	888	952	866	844	856
1936–1939...	935	918	895	930	887	793	758	792	902	790	745	775
1940–1942...	1,011	901	857	858	824	960	871	849	759	938	896	869
1943–1945...	890	767	752	743	724	797	780	710	668	766	792	778
1946	827	785	736	745	551	709	647	652	459	654	696	665
1947	727	723	695	711	501	726	614	594	465	696	627	644
	6–9 months				9–12 months				Total under 1 year			
1926–1930...	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1931–1935...	810	816	748	804	740	739	713	771	936	903	892	918
1936–1939...	743	651	593	618	573	501	504	616	853	793	779	830
1940–1942...	542	682	638	682	392	490	500	579	803	838	801	815
1943–1945...	443	486	503	534	322	286	332	402	699	677	689	690
1946	328	431	404	441	193	235	260	315	580	640	629	651
1947	351	469	432	482	227	272	280	352	538	631	600	629

* Excluding Greater London.

ages from six months to a year improvement was smallest in the rural districts. The total rates under one year declined most in Greater London, less in the small towns, and least, with practically no difference between them, in the county boroughs and in the rural districts.

Table XIIIa, b, based on the number of deaths at various ages in 1946 and 1947 (*see* Table 13 of Part I), gives rates per thousand related live births by sex, legitimacy and region.

Table XIIIa.—Infant Mortality at various Ages, 1946. Rates per 1,000 Related Live Births.

		Total under 1 year	Under 30 mins.	30 mins. and under 1 day	Total under 1 day	Days						1 day and under 1 week	Weeks				Total under 4 weeks	4 weeks to 3 mnths.	Months		
						1	2	3	4	5	6		0–	1–	2–	3–			3–6	6–9	9–12
England and Wales																					
All Infants	M.	48·3	1.2	8.6	9·9	3·5	2·7	1·8	1·0	0·7	0·8	10·5	20·3	3·6	2·2	1·7	27·8	8·2	6·7	3·6	2·0
	F.	37·1	1·1	6·3	7·5	2·5	1·7	1·2	0·9	0·7	0·6	7·6	15·1	2·8	1·7	1·3	21·0	6·0	5·4	3·0	1·7
	P.	42·9	1·2	7·5	8·7	3·0	2·2	1·5	0·9	0·7	0·7	9·1	17·8	3·2	2·0	1·5	24·5	7·1	6·1	3·3	1·9
Legitimate	M.	46·8	1·0	8·6	9·6	3·4	2·6	1·8	1·0	0·7	0·8	10·3	20·0	3·4	2·1	1·6	27·1	7·7	6·4	3·5	2·0
	F.	36·0	0·9	6·2	7·1	2·5	1·7	1·2	0·8	0·7	0·6	7·6	14·7	2·7	1·7	1·3	20·3	5·7	5·3	3·0	1·7
	P.	41·6	1·0	7·4	8·4	3·0	2·2	1·5	0·9	0·7	0·7	9·0	17·4	3·1	1·9	1·5	23·8	6·7	5·9	3·3	1·9
Illegitimate	M.	67·7	4·0	9·4	13·4	3·8	3·4	2·0	1·2	0·9	0·8	12·2	25·5	5·0	3·1	2·9	36·4	14·8	10·0	4·5	1·9
	F.	52·1	4·8	8·3	13·1	3·1	1·9	1·2	1·1	0·7	0·6	8·6	21·7	3·9	2·2	2·1	29·9	10·2	6·9	3·6	1·6
	P.	60·1	4·4	8·8	13·2	3·5	2·7	1·6	1·2	0·8	0·7	10·4	23·7	4.5	2.6	2.5	33·2	12·5	8·5	4·1	1·8
South East		34·5	1·1	6·7	7·9	2·8	1·9	1·4	0·8	0·6	0·6	8·1	16·0	2·6	1·4	1·1	21·1	5·2	4·3	2·5	1·4
Greater London		34·7	1·2	6·4	7·6	2·9	1·9	1·3	0·9	0·6	0·6	8·3	15·8	2·7	1·3	1·0	20·9	5·3	4·5	2·6	1·4
Remainder of South East		34·2	1·0	7·2	8·3	2·7	1·9	1·4	0·7	0·6	0·6	7·9	16·2	2·3	1·6	1·3	21·4	5·1	4·1	2·3	1·4
North		51·5	1·2	8·2	9·4	3·1	2·4	1·6	1·0	0·9	0·8	9·9	19·2	3·8	2·5	2·0	27·5	9·3	8·0	4·2	2·4
North I		53·0	1·2	8·8	10·0	3·0	2·6	1·6	0·9	0·7	0·8	9·7	19·7	3·1	1·6	1·6	25·9	8·2	10·4	4·8	2·7
North II		46·6	1·2	9·3	10·4	3·0	2·6	1·4	1·1	1·2	0·6	9·9	20·3	3·6	1·7	1·6	27·2	7·5	6·3	3·6	2·0
North III		44·0	0·9	8·2	9·0	3·2	2·0	1·5	1·2	0·7	0·7	9·4	18·4	3·4	1·7	1·5	25·1	7·3	6·5	3·1	2·0
North IV		56·3	1·4	7·7	9·1	3·1	2·6	1·7	1·0	0·9	0·8	10·2	19·3	4·2	3·6	2·5	29·6	10·9	8·4	4·8	2·5
Midland		44·9	1·3	8·1	9·4	3·0	2·2	1·6	1·0	0·8	0·7	9·3	18·8	3·4	1·9	1·6	25·6	7·0	6·6	3·7	2·0
Midland I		45·7	1·5	7·9	9·4	3·1	2·1	1·6	1·1	0·9	0·7	9·4	18·8	3·5	2·0	1·6	25·9	7·3	6·8	3·9	1·9
Midland II		43·2	1·0	8·5	9·5	2·7	2·5	1·5	1·0	0·7	0·7	9·1	18·7	3·1	1·8	1·4	25·0	6·5	6·2	3·5	2·1
East		35·5	1·1	6·6	7·7	2·6	2·0	1·3	0·8	0·6	0·6	7·9	15·6	2·9	1·5	1·3	21·3	5·7	3·8	2·9	1·8
South West		38·9	1·3	7·4	8·7	3·5	2·1	1·6	0·9	0·8	0·8	9·7	18·4	2·9	2·0	1·4	24·7	5·7	4·0	2·6	1·9
Wales		47·1	1·2	7·5	8·7	3·3	2·7	1·7	1·1	0·8	0·7	10·2	18·9	3·3	2·2	1·6	26·1	9·0	7·2	3·1	1·8
Wales I		48·2	1·2	7·5	8·8	3·3	2·9	1·7	1·0	0·8	0·6	10·3	19·0	3·5	2·2	1·8	26·6	9·1	7·5	3·3	1·8
Wales II		44·2	1·0	7·3	8·3	3·3	2·4	1·7	1·2	0·9	0·7	10·2	18·5	3·0	2·2	1·1	24·8	8·6	6·4	2·5	1·8
County boroughs*		50·6	1·3	7·9	9·2	3·0	2·3	1·5	0·9	0·9	0·7	9·5	18·7	3·6	2·5	2·1	26·9	9·1	7·9	4·4	2·3
Other urban districts*		42·2	1·1	7·8	8·9	3·0	2·3	1·6	1·0	0·7	0·7	9·4	18·2	3·0	1·9	1·4	24·6	6·7	6·0	3·1	1·8
Rural districts*		38·8	1·2	7·6	8·8	3·0	2·2	1·4	0·9	0·7	0·7	8·9	17·7	3·1	1·7	1·2	23·7	6·1	4·7	2·6	1·7

*Excluding Greater London.

Table XIIIb.—Infant Mortality at various Ages, 1947. Rates per 1,000 Related Live Births.

		Total under 1 year	Under 30 mins.	30 mins. and under 1 day	Total under 1 day	Days						1 day and under 1 week	Weeks				Total under 4 weeks	4 weeks to 3 mnths.	Months		
						1	2	3	4	5	6		0–	1–	2–	3–			3–6	6–9	9–12
England and Wales																					
All Infants	M.	46·3	0·9	7·8	8·8	3·0	2·4	1·8	1·1	0·9	0·7	9·8	18·5	3·2	2·1	1·6	25·4	8·0	6·6	3·9	2·3
	F.	36·2	1·0	5·8	6·8	2·4	1·8	1·2	0·8	0·7	0·6	7·5	14·4	2·7	1·7	1·1	19·8	5·8	5·4	3·3	1·9
	P.	41·4	1·0	6·9	7·8	2·7	2·1	1·5	1·0	0·8	0·6	8·7	16·5	2·9	1·9	1·4	22·7	6·9	6·0	3·6	2·1
Legitimate	M.	45·4	0·8	7·8	8·5	2·9	2·4	1·8	1·1	0·9	0·6	9·7	18·2	3·1	2·0	1·6	24·9	7·7	6·5	3·9	2·3
	F.	35·2	0·8	5·7	6·6	2·3	1·8	1·1	0·8	0·7	0·6	7·4	14·0	2·6	1·6	1·0	19·2	5·6	5·3	3·2	1·9
	P.	40·4	0·8	6·8	7·6	2·7	2·1	1·4	1·0	0·8	0·6	8·6	16·1	2·8	1·8	1·3	22·1	6·7	5·9	3·6	2·1
Illegitimate	M.	62·3	4·2	8·4	12·6	3·9	3·2	2·2	1·1	1·0	0·7	12·3	24·8	4·6	3·0	2·7	35·0	12·7	8·9	3·5	2·1
	F.	53·5	4·4	7·5	11·9	3·7	2·4	1·7	0·8	1·1	0·5	10·2	22·0	4·3	3·2	2·1	31·6	9·0	7·3	4·1	1·6
	P.	58·0	4·3	7·9	12·2	3·8	2·8	2·0	1·0	1·1	0·6	11·2	23·5	4·5	3·0	2·4	33·4	10·9	8·1	3·8	1·8
South East		32·7	0·9	6·0	6·9	2·3	1·9	1·3	0·8	0·7	0·6	7·6	14·4	2·5	1·3	0·8	19·0	4·9	4·4	2·7	1·7
Greater London		32·2	0·9	5·8	6·8	2·3	1·9	1·2	0·7	0·6	0·6	7·3	14·0	2·4	1·2	0·8	18·3	4·9	4·6	2·8	1·6
Remainder of South East		33·4	0·8	6·2	7·0	2·4	1·9	1·4	0·9	0·7	0·6	8·0	15·0	2·6	1·4	0·9	19·9	4·9	4·2	2·6	1·7
North		50·7	1·1	7·4	8·5	3·0	2·3	1·6	1·1	0·9	0·6	9·6	18·1	3·4	2·6	1·9	26·0	9·4	8·3	4·5	2·5
North I		48·9	1·0	7·6	8·6	2·7	2·5	1·8	1·0	0·6	0·6	9·1	17·7	2·3	2·4	1·6	24·0	9·2	8·9	4·2	2·6
North II		47·2	1·3	6·7	8·0	2·7	2·9	2·0	0·9	1·1	0·6	10·2	18·1	3·2	1·8	1·4	24·6	8·3	8·2	4·4	1·8
North III...		46·1	1·0	7·0	8·0	3·1	1·9	1·4	1·1	1·1	0·6	9·1	17·1	3·7	2·4	1·5	24·8	8·2	7·1	3·9	2·1
North IV		54·7	1·1	7·8	8·9	3·1	2·4	1·6	1·1	0·9	0·7	9·8	18·7	3·7	3·0	2·3	27·7	10·3	8·7	5·1	2·9
Midland		41·1	1·0	7·0	8·0	2·7	2·1	1·5	1·0	0·8	0·7	8·7	16·8	2·7	1·8	1·3	22·6	6·6	5·8	3·8	2·4
Midland I...		40·2	1·0	6·8	7·8	2·7	2·0	1·4	0·9	0·8	0·7	8·5	16·3	2·6	1·8	1·3	22·0	6·4	5·7	3·8	2·2
Midland II		42·9	1·1	7·3	8·4	2·8	2·2	1·6	1·3	0·9	0·6	9·3	17·6	2·9	1·9	1·3	23·7	6·9	5·9	3·7	2·6
East		35·9	1·0	7·0	8·0	2·8	2·0	1·5	0·7	0·8	0·8	8·6	16·6	2·9	1·2	1·1	21·8	5·5	4·4	2·5	1·7
South West		35·7	0·8	7·3	8·1	2·8	2·5	1·3	1·0	1·0	0·4	9·1	17·2	3·3	2·2	1·4	24·2	4·4	3·0	2·5	1·7
Wales		49·1	0·8	7·7	8·5	3·1	2·3	1·9	1·2	0·8	0·7	10·0	18·5	3·1	2·0	1·8	25·3	9·1	7·4	4·7	2·6
Wales I		49·9	0·8	8·0	8·7	3·0	2·2	1·8	1·0	0·7	0·7	9·6	18·3	2·9	1·9	1·9	25·0	9·8	7·7	4·8	2·6
Wales II		46·9	0·9	7·0	7·9	3·3	2·5	2·2	1·6	0·8	0·6	11·0	18·9	3·5	2·2	1·5	26·1	7·3	6·7	4·4	2·5
County boroughs*		49·9	1·1	7·2	8·3	2·8	2·1	1·5	1·0	0·9	0·7	9·0	17·3	3·2	2·5	1·8	24·8	9·4	8·4	4·7	2·7
Other urban districts*		40·3	0·9	7·2	8·1	2·7	2·2	1·6	1·0	0·8	0·5	8·9	17·0	3·0	1·9	1·4	23·2	6·4	5·4	3·3	2·0
Rural districts*		37.5	0·9	6·7	7·7	3·0	2·3	1·6	1·1	0·8	0·7	9·4	17·0	2·9	1·5	1·2	22·7	5·6	4·5	2·9	1·9

* Excluding Greater London.

The percentage ratios of male to female infant mortality at various ages in 1938, 1946 and 1947 are compared below :—

	Under one day	1–7 days	1–4 weeks	4 weeks to 3 months	3–6 months	6–9 months	9–12 months	Total under one year
1938 ...	127	133	123	147	132	120	126	131
1946 ...	132	138	129	137	124	120	118	130
1947 ...	129	131	125	138	122	118	121	128

There has been a constant tendency for the excess mortality among male infants to be greatest at the two ages, 4 weeks–three months and 1–7 days.

The mortality rates of illegitimate infants expressed as a percentage of legitimate (male and female combined) are as follows :—

	Under one day	1–7 days	1–4 weeks	4 weeks to 3 months	3–6 months	6–9 months	9–12 months	Total under one year
1938 ...	197	119	134	197	176	147	105	157
1946 ...	157	116	148	187	144	124	95	144
1947 ...	161	130	168	163	137	106	86	144

The age periods with the largest excess of mortality for illegitimate infants in 1946 and 1947 were the first day and between one week and three months. For most periods there has been a narrowing of the difference between the legitimate and the illegitimate.

The upper part of Table XIV shows the trend of infant mortality by sex and legitimacy since 1936–39. The total infant mortality of males decreased from 61·7 in 1936–39 to 46·3 in 1947, a reduction of 25 per cent., compared with a corresponding reduction among female infants from 47·7 to 36·2 or 24 per cent. Among illegitimate infants (male and female combined) the rate fell from 86·8 to 58·0, a decrease of 33 per cent.

The neonatal mortality of male infants was 32·5 in 1936–39 and 25·4 in 1947, a decrease of 22 per cent. The female rate declined from 25·6 to 19·8 or by 23 per cent. The illegitimate neonatal mortality rate fell by 26 per cent. from 45·3 in 1936–39 to 33·4 in 1947.

Table XIV.—Infant Mortality by Age and Legitimacy, and by Cause ; Neonatal Mortality by Cause, 1936-47.

	Deaths per 1,000 related live births								
	1936–39	1940	1941	1942	1943	1944	1945	1946	1947
ALL CAUSES									
All male infants									
under 4 weeks	32·5	33·2	32·6	30·3	27·9	27·0	27·7	27·8	25·4
4 weeks–3 months ...	10·2	10·7	13·2	10·1	10·0	9·3	9·4	8·2	8·0
3–6 months	8·7	9·6	10·7	8·4	8·9	7·7	7·7	6·7	6·6
6–9 months	5·9	6·3	6·4	4·8	5·0	4·1	4·2	3·6	3·9
9–12 months	4·4	4·4	4·6	3·0	2·9	2·3	2·5	2·0	2·3
Total under 1 year ...	61·7	64·3	67·5	56·5	54·7	50·4	51·4	48·3	46·3
All female infants									
under 4 weeks	25·6	25·8	25·2	23·9	22·4	21·5	21·7	21·0	19·8
4 weeks–3 months ...	7·1	7·7	9·3	7·2	7·5	6·7	6·9	6·0	5·8
3–6 months	6·6	6·7	8·6	6·7	6·6	6·2	6·2	5·4	5·4
6–9 months	4·7	5·0	5·2	4·0	4·0	3·5	3·3	3·0	3·3
9–12 months	3·6	3·6	4·1	2·6	2·7	2·2	2·1	1·7	1·9
Total under 1 year ...	47·7	48·8	52·2	44·3	43·2	40·1	40·3	37·1	36·2
Illegitimate infants									
under 4 weeks	45·3	44·0	41·0	40·7	36·3	35·5	34·3	33·2	33·4
4 weeks–3 months ...	16·2	15·2	17·5	14·6	15·6	15·5	13·7	12·5	10·9
3–6 months	13·9	12·6	13·9	11·7	11·9	10·5	10·1	8·5	8·1
6–9 months	7·1	6·7	5·6	5·3	4·9	4·7	3·8	4·1	3·8
9–12 months	4·3	3·8	4·3	2·6	2·7	2·3	2·8	1·8	1·8
Total under 1 year ...	86·8	82·4	82·3	75·0	71·4	68·5	64·8	60·1	58·0
All infants under 1 year									
Whooping cough	1·2	0·6	2·1	0·8	0·9	1·0	0·6	0·7	0·6
Tuberculous diseases ...	0·6	0·6	0·7	0·5	0·5	0·4	0·4	0·4	0·4
Measles	0·5	0·4	0·6	0·2	0·4	0·1	0·3	0·1	0·3
Convulsions	1·3	1·2	1·3	1·0	0·8	0·6	0·6	0·4	0·3
Bronchitis and pneumonia	10·5	12·7	13·7	9·2	10·2	8·5	9·3	8·0	7·8
Enteritis and diarrhœa ...	5·1	4·4	4·8	5·2	4·9	4·8	5·1	4·4	5·1
Congenital malformations	6·2	6·6	6·6	6·5	5·9	5·5	5·6	5·4	4·9
Premature birth	15·5	14·4	14·7	13·7	12·8	11·8	11·0	10·9	9·5
Injury at birth	2·7	2·7	2·6	2·6	2·4	2·4	2·7	2·7	2·7
Asphyxia, atelectasis ...	2·1	2·3	2·2	2·0	1·8	2·0	2·8	2·9	2·9
Hæmolytic disease ...	0·5	0·5	0·5	0·6	0·6	0·6	0·7	0·7	0·8
Operations of war ...	—	0·3	0·4	0·1	0·0	0·1	0·0	—	—
Other violence	1·1	1·4	1·6	1·4	1·3	1·4	1·5	1·3	1·4
Other and ill-defined causes	7·6	8·7	8·2	6·8	6·6	6·2	5·4	5·0	4·7
All causes	54·9	56·8	60·0	50·6	49·1	45·4	46·0	42·9	41·4
All infants under 4 weeks									
Infective diseases	0·20	0·23	0·27	0·16	0·21	0·14	0·13	0·14	0·11
Bronchitis	0·30	0·33	0·40	0·19	0·21	0·20	0·16	0·12	0·11
Pneumonia...	0·85	1·18	1·28	1·14	1·12	1·12	1·23	1·27	1·27
Enteritis and diarrhœa ...	0·46	0·58	0·47	0·61	0·53	0·56	0·74	0·77	0·75
Congenital malformations	3·85	4·21	4·07	4·11	3·67	3·45	3·47	3·39	2·99
Premature birth	14·30	13·66	13·65	12·80	12·03	11·18	10·42	10·44	9·11
Asphyxia, atelectasis ...	2·05	2·20	2·10	1·92	1·74	1·92	2·73	2·87	2·85
Congenital debility ...	1·20	1·12	1·02	0·83	0·61	0·62	0·51	0·46	0·40
Hæmolytic disease ...	5·91	0·49	0·49	0·56	0·56	0·57	0·67	0·64	0·69
Other causes		5·61	5·25	4·91	4·54	4·59	4·70	4·36	4·42
All causes	29·12	29·61	29·00	27·23	25·22	24·35	24·76	24·46	22·70

The mortality rates on the first day, the remainder of the first week and the next three weeks in Greater London, county boroughs, other urban districts and rural districts in 1938 and 1947 are expressed in the table below as a percentage of the corresponding rates for England and Wales. In addition, the table shows percentage decreases in the rates for each area between 1938 and 1947, the corresponding percentage decreases in England and Wales being: on the first day 24 per cent., at 1–7 days 19 per cent., and at 1–4 weeks 14 per cent.

	Greater London			County Boroughs*			Other Urban Districts*			Rural Districts*		
	Days		Weeks	Days		Weeks	Days		Weeks	Days		Weeks
	0–	1–7	1–4	0–	1–7	1–4	0–	1–7	1–4	0–	1–7	1–4
Rates per cent. of England and Wales 1938	88	74	76	105	108	117	100	106	101	101	107	94
Rates per cent. of England and Wales 1947	87	84	69	106	103	121	104	102	100	99	108	90
Percentage decrease from 1938 to 1947	*25*	*9*	*22*	*23*	*23*	*11*	*21*	*22*	*15*	*26*	*19*	*18*

* Excluding Greater London.

In Greater London least reduction since 1938 occurred at 1–7 days, while in the other classes of area the group aged 1–4 weeks showed the smallest reduction. There was little difference between classes of area in the percentage decrease in mortality on the first day.

A similar comparison between the main regions is made in the next table.

	South East (excluding Greater London)			South West			East		
	Days		Weeks	Days		Weeks	Days		Weeks
	0–	1–7	1–4	0–	1–7	1–4	0–	1–7	1–4
Rates per cent. of England and Wales 1938	86	88	76	112	97	86	99	98	89
Rates per cent. of England and Wales 1947	90	92	79	104	105	113	103	99	84
Percentage decrease from 1938 to 1947 ...	*21*	*16*	*11*	*30*	*13*	*+13*	*22*	*19*	*19*

	Midland			Wales			North		
	Days		Weeks	Days		Weeks	Days		Weeks
	0–	1–7	1–4	0–	1–7	1–4	0–	1–7	1–4
Rates per cent. of England and Wales 1938	104	102	103	107	119	122	106	118	121
Rates per cent. of England and Wales 1947	103	100	94	109	115	110	109	110	127
Relative percentage decrease from 1938 to 1947	*25*	*21*	*22*	*23*	*22*	*23*	*22*	*24*	*9*

In each of the regions except Wales and North, reduction in mortality between 1938 and 1947 was greater on the first day than for the remainder of the neonatal period. The two regions with the greatest relative decline in mortality on the first day were the South West and Midland regions with 30 and 25 per cent. respectively. At 1–7 days the North region showed the

greatest decline, 24 per cent., whilst Wales, with 23 per cent., showed the greatest improvement at 1–4 weeks. In the South West region, mortality at 1–4 weeks failed to decline, increasing instead by 13 per cent.

A comparison between the rates at ages from four weeks to one year by class of area is made in the following table. In England and Wales the decrease at four weeks to three months was 15 per cent., at three to six months 17 per cent., at six to nine months 28 per cent., and at nine to twelve months 47 per cent.

		Greater London				County Boroughs*			
		4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months
Rates per cent. of England and Wales	1938	102	122	116	105	122	122	120	115
	1947	71	77	78	76	136	140	131	129
Percentage decrease from 1938 to 1947 ...		*41*	*48*	*52*	*62*	*5*	*5*	*22*	*41*

		Other Urban Districts*				Rural Districts*			
		4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months
Rates per cent. of England and Wales	1938	88	81	88	88	81	68	72	85
	1947	93	90	92	95	81	75	81	90
Percentage decrease from 1938 to 1947 ...		*10*	*7*	*25*	*43*	*'15*	*8*	*19*	*44*

* Excluding Greater London.

The substantial decline in mortality at each age over four weeks in Greater London has caused its rates to fall from a position above the national average in 1938 to well below it in 1947. In the county boroughs only small decreases were registered at ages between one and six months, and at each age from four weeks to one year the rates for these boroughs have become more unfavourable in comparison with the national rates than they were in 1938. On the other hand, the rates for other urban districts and rural districts have approached nearer to the national rates.

For the main regions the trends at ages between four weeks and one year between 1938 and 1947 have been as follows :—

	South East (excluding Greater London)				South West				East			
	4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months
Rates per cent. of England and Wales												
1938	77	71	76	73	80	60	76	90	72	71	62	80
1947	71	70	72	81	64	50	69	81	80	73	69	81
Percentage decrease from 1938 to 1947...	*21*	*18*	*32*	*41*	*32*	*30*	*34*	*53*	*5*	*14*	*19*	*47*

	Midland				Wales				North			
	4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months	4 weeks –3 months	3–6 months	6–9 months	9–12 months
Rates per cent. of England and Wales												
1938	101	90	98	90	101	94	96	110	115	115	114	115
1947	96	97	106	114	132	123	131	124	136	138	125	119
Percentage decrease from 1938 to 1947 ...	*20*	*11*	*22*	*33*	*+11*	*+9*	*2*	*41*	*+1*	*0*	*21*	*46*

In each region the decline in mortality was greatest at ages 9–12 months followed by 6–9 months. At ages between one and six months improvement was considerable in the South East, South West and Midland regions ; but in Wales and the North there was no reduction in 1947 compared with 1938. In Wales, however, if comparison had been made with 1939 instead of 1938, the rates for 1947 would have shown a distinct improvement.

Comparing the regional rates at these ages with those of the country as a whole the relative position of the South East and of the Eastern region changed little from 1938, the South West improved at each age, the Midland region showed some deterioration at 3–12 months, and in Wales and the North the rates at each age in 1947 showed greater relative excess over the national rates than in 1938.

Stillbirth, Neonatal and Post-Natal Mortality Rates in County Boroughs.

Table XV gives mean annual stillbirth rates, neonatal and post-natal mortality rates in 1946–47 for each of the county boroughs of England and Wales grouped into five composite geographical regions—*viz.*, North (42 county boroughs) Midland and East (21 county boroughs), South (13 county boroughs), Wales (4 county boroughs) and Greater London (3 county boroughs). For the three rates the table also gives the ranking order of each county borough within its own geographical group, the county borough with the highest rate in each group being first in ranking order. A plus or a minus sign beside a rate indicates that it is statistically significantly* higher or lower than the average rate for its own group. This method of presentation has been introduced to facilitate recognition of those boroughs with rates markedly different from their neighbours and to see whether the three rates tend to show uniform rankings. Ties were eliminated by calculating rates to as many places of decimals as might be necessary. A similar analysis, but without stillbirths or distinction between neonatal and post-natal deaths, was given in the 1938–39 Text (page 26), the boroughs being grouped by size of population instead of by geographical location.

* Criterion of significance, 5 per cent.

Table XV.—Stillbirth rates per 1,000 total births, and neonatal and post-natal death rates per 1,000 live births in County Boroughs arranged in five regional groups, 1946-47.

	STILLBIRTHS			NEONATAL DEATHS			POST-NATAL DEATHS		
	Rate per 1,000 total births	Significance of difference from regional average	Order of ranking within region	Rate per 1,000 live births	Significance of difference from regional average	Order of ranking within region	Rate per 1,000 live births	Significance of difference from regional average	Order of ranking within region
NORTH	**28**	—	—	**28**	—	—	**27**	—	—
Barnsley	23		37	22		36	19	—	30
Barrow-in-Furness	21	—	42	31		14	21		25
Birkenhead	35	+	5	31		13	40	+	3
Blackburn	26		31	24		33	18	—	34
Blackpool	28		21	24		32	17	—	37
Bolton	27		25	21	—	40	17	—	36
Bootle	29		14	37	+	2	48	+	1
Bradford	28		18	30		15	25		20
Burnley	33		7	28		19	19	—	31
Bury	29		13	27		21	21		23
Carlisle	32		8	41	+	1	18	—	32
Chester	26		30	36	+	3	35	+	5
Darlington	27		28	23		34	16	—	38
Dewsbury	30		11	26		23	18	—	33
Doncaster	33		6	26		22	15	—	39
Gateshead	25		36	25		29	31		9
Halifax	26		33	23		35	14	—	40
Huddersfield	26		32	34	+	5	18	—	35
Kingston upon Hull	29		16	21	—	38	28		14
Leeds	28		19	25	—	30	21	—	24
Liverpool	26	—	29	32	+	9	39	+	4
Manchester	28		17	32	+	10	30	+	10
Middlesbrough	31		10	33	+	8	28		15
Newcastle upon Tyne	27		23	22	—	37	20	—	26
Oldham	26		34	24		31	27		17
Preston	27		24	36	+	4	27		16
Rochdale	32		9	33		7	20	—	27
Rotherham	22	—	40	29		17	25		19
St. Helens	36	+	3	33	+	6	32	+	7
Salford	27		27	26		25	32	+	8
Sheffield	28		20	20	—	42	19	—	28
Southport	21	—	41	25		27	12	—	42
South Shields	25		35	27		20	30		12
Stockport	36	+	4	26		26	24		21
Sunderland	27		22	25		28	35	+	6
Tynemouth	30		12	32		11	26		18
Wallasey	23	—	38	26		24	21	—	22
Wakefield	27		26	21	—	41	19	—	29
Warrington	38	+	1	28		18	45	+	2
West Hartlepool	29		15	30		16	30		11
Wigan	36	+	2	31		12	29		13
York	22	—	39	21	—	39	12	—	41
MIDLAND and EAST	**26**	—	—	**24**	—	—	**20**	—	—
Birmingham	25		14	21	—	15	19	—	13
Bristol	24		16	20	—	18	12	—	20
Burton upon Trent	32	+	2	37	+	1	17		15
Coventry	25		12	29	+	3	21		8
Derby	24		15	27		5	21		9
Dudley	31		4	23		13	31	+	3
Gloucester	26		11	21		17	20		11
Gt. Yarmouth	34	+	1	16	—	21	15		17
Grimsby	28		10	17	—	20	22		6
Ipswich	22		17	19		19	11	—	21
Leicester	25		13	25		8	25	+	4
Lincoln	30		5	24		12	15	—	18
Northampton	16	—	21	25		9	14	—	19
Norwich	30	+	6	21		16	18		14
Nottingham	22	—	18	25		10	22		7
Smethwick	22		20	30	+	2	16		16
Stoke on Trent	30	+	7	26	+	7	32	+	1
Walsall	22		19	27		6	21		10
West Bromwich	29		8	22		14	31	+	2
Wolverhampton	32	+	3	28	+	4	24	+	5
Worcester	29		9	25		11	19		12

Table XV.—(*contd.*)

	STILLBIRTHS			NEONATAL DEATHS			POST-NATAL DEATHS		
	Rate per 1,000 total births	Significance of difference from regional average	Order of ranking within region	Rate per 1,000 live births	Significance of difference from regional average	Order of ranking within region	Rate per 1,000 live births	Significance of difference from regional average	Order of ranking within region
SOUTH	**24**	—	—	**23**	—	—	**17**	—	—
Bath	23		9	24		4	13		8
Bournemouth	26		6	24		3	10	—	11
Brighton	24		7	24		5	24	+	2
Canterbury	16		13	15		13	15		6
Eastbourne	30		1	17		12	13		9
Exeter	26		5	31	+	1	23	+	3
Hastings	28		2	18		11	10	—	13
Oxford	22		11	20		9	11	—	10
Plymouth	22		10	28	+	2	20	+	4
Portsmouth	23		8	19	—	10	15		7
Reading	27		4	23		7	18		5
Southampton	27	+	3	28		6	24	+	1
Southend-on-Sea ...	20	—	12	22		8	10	—	12
WALES	**30**	—	—	**26**	—	—	**24**	—	—
Cardiff	28		3	25		3	24		3
Merthyr Tydfil	42	+	1	32		1	30	+	1
Newport	28		4	31	+	2	29	+	2
Swansea	29		2	21	—	4	17	—	4
GREATER LONDON ...	**23**	—	—	**19**	—	—	**16**	—	—
East Ham	23		3	18		2	12	—	3
West Ham	23		2	20		1	17		1
Croydon	24		1	18		3	17		2

Within the Northern group the county boroughs occupying the three highest (worst) and three lowest (best) positions in the ranking order, with rates shown in brackets, were :—

		Stillbirths		*Neonatal Deaths*		*Post-Natal Deaths*	
Highest ...	1	Warrington	(38) +	Carlisle	(41) +	Bootle	(48) +
	2	Wigan	(36) +	Bootle	(37) +	Warrington	(45) +
	3	St. Helens	(36) +	Chester	(36) +	Birkenhead	(40) +
Lowest ...	40	Rotherham	(22) —	Bolton	(21) —	Halifax	(14) —
	41	Southport	(21) —	Wakefield	(21) —	York	(12) —
	42	Barrow	(21) —	Sheffield	(20) —	Southport	(12) —

Of the 42 county boroughs in the Northern group St. Helens alone had all three rates significantly higher than the average, while York alone had all three rates significantly below average. The stillbirth rate for Liverpool was low, but the neonatal and post-natal rates were high. In Carlisle the stillbirth and neonatal rates were high, the latter significantly so, but the post-natal mortality was significantly low.

Coefficients of rank correlation between the 42 sets of rates in this group were :—

Stillbirth rate and neonatal rate ... ... 0·35 (Significant).
Neonatal rate and post-natal rate ... ... 0·47 (Significant).
Stillbirth rate and post-natal rate ... ... 0·27 (Not significant).

The neonatal rate tended to be associated more closely with the post-natal than with the stillbirth rate, but in neither case was the association strong.

Within the Midlands and East the three county boroughs with the highest and the lowest rates were :—

		Stillbirths		*Neonatal Deaths*		*Post-Natal Deaths*	
Highest	1	Great Yarmouth	(34) +	Burton upon Trent	(37) +	Stoke on Trent	(32) +
	2	Burton upon Trent	(32) +	Smethwick	(30) +	West Bromwich	(31) +
	3	Wolverhampton	(32) +	Coventry	(29) +	Dudley	(31) +
Lowest	19	Walsall	(22)	Ipswich	(19)	Northampton	(14) —
	20	Smethwick	(22)	Grimsby	(17) —	Bristol	(12) —
	21	Northampton	(16) —	Great Yarmouth	(16) —	Ipswich	(11) —

In Stoke on Trent and Wolverhampton all three rates were significantly above the average of their group. Great Yarmouth showed a remarkable disparity in the ranking of its stillbirth rate, the highest in the region, and its neonatal and post-natal mortality rates, the lowest and the fourth lowest respectively within the region.

Coefficients of rank correlation for these 21 county boroughs were as follows:—

Stillbirth rate and neonatal rate	0·12 (Not significant).
Neonatal rate and post-natal rate	0·25 (Not significant).
Stillbirth rate and post-natal rate	0·25 (Not significant).

There was no evidence of uniformity of the three rates among these boroughs, none of the correlation coefficients being significantly different from zero.

In the group of 13 county boroughs in the South of England, excluding Greater London, the three with the highest and with the lowest rates were :—

		Stillbirths		*Neonatal Deaths*		*Post-Natal Deaths*	
Highest	1	Eastbourne	(30)	Exeter	(31) +	Southampton	(24) +
	2	Hastings	(28)	Plymouth	(28) +	Brighton	(24) +
	3	Southampton	(27) +	Bournemouth	(24)	Exeter	(23) +
Lowest	11	Oxford	(22)	Hastings	(18)	Bournemouth	(10) —
	12	Southend-on-Sea	(20) —	Eastbourne	(17)	Southend-on-Sea	(10) —
	13	Canterbury	(16)	Canterbury	(15)	Hastings	(10) —

Both the neonatal and post-natal rates were significantly above average in Exeter and in Plymouth. The stillbirth and post-natal rates were significantly above average in Southampton and significantly below average in Southend-on-Sea.

Coefficients of rank correlation between these 13 county boroughs of the Southern group were :—

Stillbirth rate and neonatal rate	0·01 (Not significant).
Neonatal rate and post-natal rate	0·41 (Not significant).
Stillbirth rate and post-natal rate	0·09 (Not significant).

Among the four county boroughs of Wales, Merthyr Tydfil came highest in respect of each of the three rates. Newport occupied second place in regard to neonatal and post-natal mortality but had the lowest stillbirth rate. Cardiff

Table XVI.—Stillbirth rates per 1,000 total births, and neonatal and post-natal death rates per 1,000 live births in 28 Metropolitan Boroughs of London Administrative County, 1946-47.

	STILLBIRTHS			NEONATAL DEATHS			POST-NATAL DEATHS		
	Rate per 1,000 total births	Significance of difference from county average	Order of ranking within county	Rate per 1,000 live births	Significance of difference from county average	Order of ranking within county	Rate per 1,000 live births	Significance of difference from county average	Order of ranking within county
LONDON ADMINISTRATIVE COUNTY	**22**			**20**			**16**		
Battersea	25		8	19		20	18		10
Bermondsey	27		4	20		18	16		16
Bethnal Green	25		7	21		10	22	+	3
Camberwell	19	—	26	20		15	19		8
Chelsea	19		25	21		9	23	+	1
Deptford	14	—	28	22		8	13		22
Finsbury	24		11	21		11	21		5
Fulham	21		23	21		13	16		17
Greenwich	15	—	27	18		24	13		24
Hackney	23		14	18		23	13	—	23
Hammersmith	24		12	24		4	17		12
Hampstead	21		20	23		5	10	—	28
Holborn	28		3	27		1	11		26
Islington	20		24	21		14	15		19
Kensington	23		19	25	+	3	20	+	6
Lambeth	23		17	17	—	25	17		14
Lewisham...	21		22	21		12	12	—	25
Paddington	23		18	27	+	2	18		9
Poplar	24		10	15	—	28	20		7
St. Marylebone	25		6	16		26	15		18
St. Pancras	24		9	19		22	18		11
Shoreditch	29	+	1	20		17	17		13
Southwark	26		5	20		16	22	+	2
Stepney	28	+	2	22		6	22	+	4
Stoke Newington ...	23		16	19		21	10	—	27
Wandsworth	21		21	19		19	14	—	20
Westminster	24		13	22		7	17		15
Woolwich	23		15	16	—	27	14		21

occupied third place for each rate and Swansea had the lowest neonatal and post-natal rates.

The Greater London area has only three towns with the status of county borough. Of these West Ham had the highest neonatal and post-natal mortality and Croydon the highest stillbirth rate, while East Ham had the lowest stillbirth and post-natal rates, the latter being significantly lower than the average of the three boroughs.

Stillbirth, Neonatal and Post-Natal Mortality Rates in Metropolitan Boroughs.

Table XVI presents rates arranged in similar fashion in respect of the 28 metropolitan boroughs constituting the Administrative County of London. The three metropolitan boroughs occupying the highest and lowest positions in ranking order were :—

		Stillbirths		*Neonatal Deaths*		*Post-Natal Deaths*	
Highest	1	Shoreditch	(29) +	Holborn	(27)	Chelsea	(23) +
	2	Stepney	(28) +	Paddington	(27) +	Southwark	(22) +
	3	Holborn	(28)	Kensington	(25) +	Bethnal Green	(22) +
Lowest	26	Camberwell	(19) —	St. Marylebone	(16)	Holborn	(11)
	27	Greenwich	(15) —	Woolwich	(16) —	Stoke Newington	(10) —
	28	Deptford	(14) —	Poplar	(15) —	Hampstead	(10) —

Of the 28 boroughs there were only two with more than one of the rates significantly worse than average. Kensington had significantly high neonatal and post-natal rates while in Stepney the stillbirth and the post-natal rates were significantly above average. Coefficients of rank correlation were as follows :—

Stillbirth rate and neonatal rate	0·06 (Not significant).
Neonatal rate and post-natal rate	0·16 (Not significant).
Stillbirth rate and post-natal rate	0·28 (Not significant).

Comparison between the **regional averages** of the county and metropolitan boroughs is given in Table XVII. The Northern group of county boroughs had the highest neonatal and post-natal rates and came second to Wales in

Table XVII.—Stillbirth rates per 1,000 total births, and neonatal and post-natal death rates per 1,000 live births. Average rates of County Boroughs in regional groups and of Metropolitan Boroughs of London Administrative County, 1946-47.

County and Metropolitan Boroughs in	STILLBIRTHS			NEONATAL DEATHS			POST-NATAL DEATHS		
	Rate per 1,000 total births	Significance of difference from national average	Order of ranking	Rate per 1,000 live births	Significance of difference from national average	Order of ranking	Rate per 1,000 live births	Significance of difference from national average	Order of ranking
ENGLAND AND WALES	**26**			**23**			**19**		
North	28	+	2	28	+	1	27	+	1
Midland and East ...	26		3	24		3	20	+	3
South (except Greater London)	24	−	4	23		4	17	−	4
Wales	30	+	1	26	+	2	24	+	2
London Administrative County (Metropolitan Boroughs)	22	−	6	20	−	5	16	−	5
Greater London	23	−	5	19	−	6	16	−	6

respect of stillbirths. The London metropolitan and county boroughs occupied the lowest positions in respect of each of the three rates. Coefficients of rank correlation for these geographical groups were as follows :—

Stillbirth rate and neonatal rate	0·89 (Significant).
Neonatal rate and post-natal rate	1·00 (Significant).
Stillbirth rate and post-natal rate	0·89 (Significant).

There was a much greater degree of uniformity between the three rates among the broad geographical groups than there was between the individual boroughs within each group. This is, indeed, the most striking conclusion to which the analysis has led. It would seem that the distribution of factors responsible for the parallel behaviour of stillbirth and infant mortality rates is determined on a wide regional pattern rather than by immediately local conditions. Within individual regions the relationship between stillbirths, neonatal and post-natal is by no means clear and direct. In spite of the well-recognised ætiological association between stillbirths and neonatal deaths, a town which, compared with its neighbours, has a low stillbirth rate does not, it appears, necessarily have a low neonatal death rate.

Table XVIII.—Stillbirth rates per 1,000 total births and Infant mortality rates per 1,000 live births in Municipal Boroughs and Urban Districts in Greater London (Outer Ring), 1946-47.

	STILLBIRTHS			INFANT MORTALITY		
	Rate per 1,000 total births	Significance of difference from regional average	Order of ranking within region	Rate per 1,000 live births	Significance of difference from regional average	Order of ranking within region
All Urban Districts (M.B's. and U.D's.)	**23**			**30**		
Acton	20		51	33		15
Banstead	17		57	16	−	62
Barking	22		38	32		19
Barnes	25		14	36		5
Barnet	23		33	18	−	61
Beckenham	25		21	28		39
Beddington and Wallington	21		45	29		36
Bexley	22		39	29		33
Brentford and Chiswick	25		15	32		20
Bromley	26		8	23	−	52
Bushey	37	+	1	21		57
Carshalton	24		25	21	−	58
Cheshunt	11	−	62	28		37
Chigwell	25		13	29		34
Chingford	18		56	20	−	60
Chislehurst and Sidcup	23		30	31		28
Coulsden and Purley	26		10	24		49
Crayford	28		4	37		4
Dagenham	22		41	31		27
Ealing	22		37	32		21
East Barnet	20		50	34		10
Edmonton	23		35	35	+	7
Enfield	22		43	34		8
Erith	25		17	33		14
Epsom and Ewell	23		34	24		50
Esher	20		48	26		45
Feltham	15	−	60	43	+	1
Finchley	22		40	23	−	53
Friern Barnet	30		2	38		3
Harrow	27	+	6	27		41
Hayes and Harlington	16	−	58	30		30
Hendon	27	+	5	28		40
Heston and Isleworth	24		23	34		9
Hornsey	23		31	27		43
Ilford	26		12	27		42
Kingston-upon-Thames	26		9	25		47
Leyton	21		44	31		26
Malden and Coombe	18		55	22		54
Merton and Morden	23		36	26		44
Mitcham	25		22	30		31
Orpington	24		26	32		18
Penge	25		19	32		17
Potter's Bar	13		61	24		51
Richmond	23		28	33		12
Ruislip Northwood	18		53	28		38
Southall	20		52	36		6
Southgate	24		24	31		24
Staines	23		32	39	+	2
Sunbury-on-Thames	23		27	33		13
Surbiton	20		47	22	−	55
Sutton and Cheam	20		49	33		16
Tottenham	28	+	3	31		29
Twickenham	20		46	34		11
Uxbridge	16	−	59	29		35
Waltham Holy Cross	25		16	26		46
Walthamstow	25		20	32		22
Wanstead and Woodford	22	−	42	32		23
Wembley	18		54	25		48
Willesden	25		18	30		32
Wimbledon	26		7	21	−	59
Wood Green	23		29	31		25
Yiewsley and West Drayton	26		11	21		56

Stillbirth and Infant Mortality Rates in the Outer Ring of Greater London.

Table XVIII gives stillbirth and infant mortality rates (without distinction of neonatal and post-natal rates) in 1946-47 for the 62 municipal boroughs and urban districts within the Greater London area. Districts with the highest and the lowest rates were as follows :—

		Stillbirths		*Infant Mortality*	
Highest	1	Bushey	(37) +	Feltham	(43) +
	2	Friern Barnet	(30)	Staines	(39) +
	3	Tottenham	(28) +	Friern Barnet	(38)
Lowest	60	Feltham	(15) —	Chingford	(20) —
	61	Potter's Bar	(13)	Barnet	(18) —
	62	Cheshunt	(11) —	Banstead	(16) —

The average stillbirth rate for the 62 urban districts was 23 compared with 22 for the 28 metropolitan boroughs and 23 for the three county boroughs of Greater London. The average infant mortality rate of these urban districts was 30 compared with 36 for the metropolitan boroughs and 35 for the county boroughs of Greater London. Among the 62 urban districts there was practically no correlation between stillbirths and infant deaths. The coefficient of rank correlation was −0.004 (not significant).

Table XIX.—Ratios of Deaths under 1 day to Stillbirths in Regions and Class of Area, 1946-47, and in comparison with the ratios for England and Wales.

	Deaths under 30 minutes		Deaths from 30 minutes to 1 day	
	Ratio per 100 stillbirths	Per cent. of England & Wales	Ratio per 100 stillbirths	Per cent. of England & Wales
ENGLAND AND WALES ...	**4·10**	*100*	**27·22**	*100*
South East	4·25	*104*	27·04	*99*
Greater London	4·54	*111*	25·93	*95*
Remainder of South East ...	3·87	*94*	28·52	*105*
North	3·96	*97*	26·92	*99*
North I	3·93	*96*	28·33	*104*
North II	4·28	*104*	27·54	*101*
North III	3·41	*83*	26·68	*98*
North IV	4·21	*103*	26·39	*97*
Midland	4·51	*110*	29·04	*107*
Midland I	4·72	*115*	27·95	*103*
Midland II	4·07	*99*	31·26	*115*
East	4·06	*99*	26·15	*96*
South West	4·14	*101*	29·43	*108*
Wales	3·14	*77*	23·91	*88*
Wales I	3·17	*77*	24·60	*90*
Wales II	3·05	*74*	22·07	*81*
County boroughs*	4·26	*104*	27·30	*100*
Other urban districts* ...	3·71	*90*	27·39	*101*
Rural districts*	4·08	*100*	28·04	*103*

* Excluding Greater London.

Regional Ratios of Neonatal Deaths to Stillbirths.

There may be local variations in the way in which stillbirths are distinguished from live-born children dying shortly after birth, so that in certain areas there may be a tendency for the latter to be described as stillbirths. Such a practice would tend to reduce the apparent neonatal death rate and increase the stillbirth rate, thereby lowering the recorded ratio of neonatal deaths to stillbirths.

That there are regional variations in this ratio is demonstrated in Table XIX which gives the number of deaths in 1946–47 per 100 stillbirths, distinguishing deaths under 30 minutes and deaths during the rest of the first day.

The ratio of children dying under 30 minutes to stillbirths was much lower in both regions of Wales than in any part of England. The English region with the lowest ratio was North III (83 per cent. of the average for England and Wales), and the region with the highest ratio was Midland I (115 per cent. of the average). The ratio in respect of children dying between 30 minutes and one day was again low in Wales, but the ratios for North III and Midland I were close to the national average.

Table XX which relates to 1947 only and does not sub-divide the deaths under one day, shows the ratio of deaths to stillbirths in the regional groups,

Table XX.—Ratios of Deaths under 1 day to Stillbirths by Regional Groups and Class of Area, 1947, and in comparison with the ratios for England and Wales.

	All Areas		County Boroughs		Other Urban Districts		Rural Districts	
	Ratio per 100 stillbirths	Per cent. of England & Wales	Ratio per 100 stillbirths	Per cent. of England & Wales	Ratio per 100 stillbirths	Per cent. of England & Wales	Ratio per 100 stillbirths	Per cent. of England & Wales
England and Wales	31·81	*100*	32·17	*100*	31·69	*100*	31·42	*100*
Greater London ...	30·93	*97*	31·50	*98*	30·89	*97*	—	—
Remainder of South East and South West	32·83	*103*	34·26	*106*	31·47	*99*	34·18	*109*
Midland and East ...	32·37	*102*	32·53	*101*	32·71	*103*	31·67	*101*
North	31·82	*100*	32·00	*99*	32·60	*103*	28·59	*91*
Wales	29·32	*92*	27·79	*86*	30·37	*96*	28·70	*91*

distinguishing three density classes within each region. For England and Wales as a whole the ratio was highest in the county boroughs and lowest in the rural districts but this gradation was not maintained in individual regions. As in Table XIX there was evidence of a low ratio in Wales, especially in the county boroughs. Among the English regions the only low ratio occurred in the rural districts of the North region, where the ratio was 91 per cent. of the national average and was thus the same as for the Welsh rural districts.

It is not possible to say at this stage whether these variations are real or are the result of different practices in regard to certification, and the matter requires further study.

Table XXIa.—Infant Mortality by Sex from Certain Causes at Various Ages, 1946. Rates per 1,000 Related Live Births.

International List No.	Cause of death		Total under 1 year	Under 30 mins.	30 mins. and under 1 day	Total under 1 day	Days						1 day and under 1 week	Weeks				Months				
							1–	2–	3–	4–	5–	6		0–	1–	2–	3	Total under 4 weeks	4 weeks to 3 mnths.	3–6	6–9	9–12
106	Bronchitis	M.	1·39	—	—	—	0·00	0·01	0·01	0·00	0·01	—	0·03	0·03	0·03	0·03	0·04	0·14	0·41	0·48	0·25	0·11
		F.	0·94	—	—	—	0·00	0·00	0·01	—	0·00	0·01	0·02	0·02	0·01	0·04	0·04	0·10	0·35	0·28	0·14	0·07
107–9	Pneumonia—all forms ...	M.	7·41	0·00	0·01	0·01	0·03	0·06	0·09	0·04	0·07	0·07	0·36	0·37	0·40	0·31	0·31	1·40	2·14	2·23	1·12	0·52
		F.	6·18	0·00	0·02	0·02	0·02	0·04	0·07	0·05	0·06	0·06	0·28	0·30	0·30	0·26	0·26	1·13	1·81	1·81	0·92	0·51
119	Enteritis and diarrhœa ...	M.	5·12	0·00	0·00	0·01	—	0·01	0·00	0·01	0·01	0·02	0·06	0·06	0·24	0·31	0·28	0·90	1·74	1·51	0·67	0·30
		F.	3·66	—	0·00	0·00	—	0·01	—	0·01	0·02	0·02	0·05	0·05	0·15	0·23	0·21	0·64	1·11	1·09	0·63	0·19
157	Congenital malformations	M.	6·00	0·15	0·65	0·80	0·31	0·37	0·28	0·20	0·16	0·17	1·49	2·28	0·74	0·31	0·34	3·68	1·35	0·54	0·28	0·15
		F.	4·84	0·15	0·52	0·67	0·26	0·22	0·19	0·17	0·16	0·13	1·13	1·80	0·66	0·38	0·25	3·09	0·80	0·57	0·24	0·14
158	Congenital debility ...	M.	0·92	0·01	0·09	0·10	0·05	0·04	0·04	0·02	0·01	0·02	0·20	0·30	0·09	0·10	0·05	0·53	0·27	0·09	0·02	0·01
		F.	0·67	0·01	0·09	0·10	0·05	0·02	0·02	0·02	0·01	0·01	0·12	0·22	0·07	0·07	0·03	0·39	0·18	0·08	0·01	0·01
159	Premature birth	M.	12·31	0·42	4·99	5·41	1·72	1·11	0·58	0·38	0·27	0·28	4·34	9·75	1·13	0·64	0·30	11·82	0·46	0·02	0·01	—
		F.	9·40	0·26	3·62	3·89	1·32	0·82	0·52	0·29	0·29	0·20	3·44	7·33	0·91	0·45	0·28	8·98	0·38	0·04	—	—
160 (*a*)	Intra-cranial or spinal hæmorrhage due to injury at birth	M.	2·46	0·11	0·73	0·84	0·44	0·36	0·26	0·09	0·09	0·04	1·28	2·12	0·17	0·07	0·04	2·39	0·03	0·03	0·01	—
		F.	1·32	0·10	0·41	0·51	0·20	0·17	0·10	0·06	0·06	0·04	0·63	1·15	0·10	0·04	0·01	1·30	0·02	0·00	0·00	—
(*b*)	Other intra-cranial or spinal injuries at birth	M.	0·14	0·00	0·04	0·04	0·02	0·02	0·02	0·01	0·00	0·00	0·08	0·12	0·00	0·00	0·00	0·13	0·00	0·01	0·00	0·00
		F.	0·09	0·01	0·03	0·04	0·00	0·01	—	0·02	—	0·01	0·04	0·07	0·01	—	—	0·08	0·01	0·00	—	—
(*c*)	Other birth injuries ...	M.	0·74	0·12	0·37	0·49	0·09	0·05	0·02	0·02	0·01	0·01	0·19	0·69	0·03	0·02	0·01	0·74	0·00	0·00	—	—
		F.	0·62	0·13	0·30	0·43	0·05	0·04	0·02	0·02	0·02	0·00	0·15	0·58	0·02	0·00	0·01	0·61	0·01	0·00	—	0·00
161 (*a*)	Asphyxia during or after birth, atelectasis	M.	3·35	0·19	1·36	1·55	0·59	0·35	0·23	0·08	0·05	0·07	1·37	2·92	0·23	0·09	0·04	3·28	0·05	0·02	0·00	—
		F.	2·47	0·19	1·02	1·21	0·43	0·22	0·12	0·11	0·05	0·05	0·98	2·19	0·17	0·05	0·03	2·43	0·04	—	0·00	0·00
(*b*)	Intoxication due to maternal toxæmia	M.	0·40	0·02	0·19	0·21	0·06	0·04	0·01	0·01	0·00	0·01	0·13	0·34	0·04	0·01	0·00	0·39	0·01	—	—	—
		F.	0·37	0·02	0·13	0·15	0·06	0·04	0·03	0·02	0·01	0·02	0·16	0·31	0·03	0·02	0·01	0·37	—	—	—	—
(*c*1)	Infection of the umbilicus	M.	0·03	—	—	—	—	0·00	—	0·00	—	—	0·00	0·00	0·01	0·01	0·00	0·03	0·00	—	—	—
		F.	0·03	—	—	—	—	—	—	—	—	—	—	—	0·01	0·01	0·00	0·02	0·01	—	—	—
(*c*2)	Pemphigus neonatorum ...	M.	0·05	—	—	—	—	—	—	0·00	—	0·00	0·00	0·00	0·01	0·01	0·01	0·04	0·01	—	—	—
		F.	0·05	—	—	—	—	—	—	—	—	—	—	—	0·01	0·01	0·02	0·04	0·01	—	—	—
(*c*3)	Other or unspecified infections included under 161 (*c*)	M.	0·05	—	—	—	—	—	0·00	0·00	—	—	0·00	0·00	0·01	0·01	0·01	0·04	0·01	0·00	—	—
		F.	0·03	—	—	—	—	—	—	—	0·01	—	0·01	0·01	0·01	0·01	0·00	0·02	0·01	—	—	—
(*d*)	Melæna neonatorum ...	M.	0·35	0·01	0·03	0·04	0·03	0·06	0·05	0·04	0·01	0·02	0·21	0·25	0·06	0·01	0·01	0·34	0·01	0·00	—	—
		F.	0·26	—	0·04	0·04	0·03	0·04	0·04	0·02	0·01	0·02	0·15	0·19	0·04	0·01	0·01	0·25	0·01	—	—	—
(*e*1)	Hæmolytic diseases of the newborn	M.	0·79	0·02	0·08	0·10	0·08	0·11	0·13	0·07	0·02	0·03	0·44	0·54	0·15	0·02	0·04	0·74	0·04	0·01	0·00	0·00
		F.	0·58	0·02	0·07	0·09	0·06	0·07	0·07	0·04	0·04	0·03	0·30	0·39	0·10	0·02	0·03	0·54	0·04	0·00	—	—
(*e*2)	Other diseases included under 161 (*e*)	M.	0·07	—	0·02	0·02	0·00	0·00	0·00	0·00	0·00	0·01	0·02	0·04	0·02	—	0·01	0·07	0·00	0·00	—	—
		F.	0·06	0·01	0·01	0·02	—	0·01	0·00	0·00	0·00	—	0·02	0·03	0·02	—	—	0·05	0·00	0·01	—	—
	Other causes	M.	6·68	0·18	0·07	0·26	0·04	0·07	0·05	0·04	0·02	0·03	0·26	0·51	0·17	0·22	0·22	1·13	1·60	1·77	1·27	0·91
		F.	5·57	0·26	0·06	0·32	0·03	0·03	0·04	0·04	0·02	0·01	0·16	0·48	0·15	0·14	0·18	0·95	1·24	1·49	1·08	0·81

Table XXIb.—Infant Mortality by Sex from Certain Causes at Various Ages, 1947. Rates per 1,000 Related Live Births.

International List No.	Cause of death		Total under 1 year	Under 30 mins.	30 mins. and under 1 day	Total under 1 day	Days						1 day and under 1 week	Weeks				Months				
							1–	2–	3–	4–	5–	6		0–	1–	2–	3	Total under 4 weeks	4 weeks to 3 mnths.	3–6	6–9	9–12
106	Bronchitis	M.	1·07	—	—	—	—	0·00	0·01	0·01	—	—	0·02	0·02	0·02	0·04	0·04	0·13	0·30	0·31	0·24	0·09
		F.	0·83	—	—	—	0·00	0·00	—	0·00	0·00	0·00	0·01	0·01	0·01	0·03	0·03	0·08	0·24	0·30	0·13	0·08
107–9	Pneumonia—all forms ...	M.	7·59	0·00	0·01	0·01	0·03	0·05	0·08	0·05	0·07	0·05	0·33	0·35	0·40	0·35	0·34	1·43	2·18	2·13	1·20	0·65
		F.	6·02	0·00	0·00	0·01	0·01	0·03	0·03	0·05	0·05	0·07	0·24	0·25	0·36	0·27	0·22	1·10	1·64	1·70	1·06	0·52
119	Enteritis and diarrhœa ...	M.	5·88	—	—	—	—	0·00	—	0·01	0·01	0·01	0·04	0·04	0·21	0·32	0·32	0·88	1·93	1·68	0·98	0·41
		F.	4·33	0·00	0·00	0·00	—	0·01	0·00	0·00	0·01	0·01	0·03	0·04	0·13	0·23	0·21	0·60	1·33	1·38	0·74	0·28
157	Congenital malformations	M.	5·22	0·07	0·53	0·61	0·26	0·31	0·29	0·18	0·14	0·13	1·30	1·91	0·55	0·36	0·24	3·06	1·24	0·57	0·23	0·12
		F.	4·54	0·10	0·54	0·64	0·25	0·25	0·23	0·16	0·17	0·16	1·21	1·85	0·58	0·32	0·17	2·92	0·81	0·44	0·25	0·12
158	Congenital debility ...	M.	0·85	0·02	0·07	0·09	0·03	0·04	0·03	0·02	0·01	0·01	0·14	0·23	0·11	0·07	0·07	0·48	0·24	0·10	0·02	0·01
		F.	0·55	0·02	0·05	0·07	0·03	0·01	0·02	0·02	0·02	0·01	0·10	0·17	0·05	0·05	0·03	0·31	0·13	0·08	0·02	0·01
159	Premature birth	M.	10·53	0·26	4·38	4·65	1·40	0·96	0·57	0·33	0·31	0·22	3·78	8·43	0·93	0·47	0·27	10·11	0·39	0·03	0·00	—
		F.	8·42	0·28	3·18	3·47	1·23	0·83	0·41	0·27	0·21	0·18	3·12	6·58	0·88	0·43	0·17	8·06	0·35	0·01	0·00	0·00
160 (*a*)	Intra-cranial or spinal hæmorrhage due to injury at birth	M.	2·36	0·09	0·74	0·82	0·43	0·32	0·25	0·13	0·08	0·06	1·27	2·10	0·15	0·05	0·02	2·33	0·03	0·00	—	—
		F.	1·50	0·08	0·46	0·54	0·27	0·18	0·11	0·10	0·07	0·06	0·78	1·32	0·10	0·04	0·01	1·48	0·01	0·01	—	0·00
(*b*)	Other intra-cranial or spinal injuries at birth	M.	0·14	0·00	0·04	0·04	0·02	0·01	0·02	0·01	0·01	0·01	0·07	0·12	0·02	0·00	0·00	0·14	0·00	—	—	—
		F.	0·07	0·00	0·02	0·02	0·01	0·01	0·00	0·00	—	0·00	0·03	0·05	0·00	0·01	0·00	0·06	—	0·01	—	—
(*c*)	Other birth injuries ...	M.	0·77	0·10	0·38	0·48	0·11	0·05	0·03	0·02	0·01	0·01	0·23	0·71	0·03	0·01	0·01	0·76	0·01	—	—	—
		F.	0·57	0·13	0·26	0·39	0·08	0·03	0·01	0·01	0·01	0·00	0·14	0·53	0·02	0·01	—	0·56	0·01	—	0·00	—
161 (*a*)	Asphyxia during or after birth, atelectasis	M.	3·29	0·15	1·36	1·51	0·51	0·34	0·23	0·13	0·08	0·05	1·35	2·86	0·24	0·09	0·04	3·22	0·06	0·01	0·00	—
		F.	2·50	0·16	1·02	1·17	0·39	0·26	0·17	0·09	0·08	0·03	1·02	2·19	0·17	0·07	0·03	2·46	0·03	0·01	—	—
(*b*)	Intoxication due to maternal toxæmia	M.	0·32	0·01	0·11	0·12	0·06	0·04	0·03	0·02	0·01	0·01	0·16	0·28	0·03	0·00	—	0·32	0·00	—	—	—
		F.	0·27	0·01	0·10	0·11	0·04	0·04	0·02	0·01	0·01	0·00	0·13	0·24	0·03	0·01	—	0·27	—	—	—	—
(*c*1)	Infection of the umbilicus...	M.	0·06	—	—	—	—	—	0·00	—	—	—	0·00	0·00	0·02	0·01	0·01	0·04	0·02	—	—	—
		F.	0·04	—	0·00	0·00	—	—	—	—	—	—	—	0·00	0·01	0·00	0·00	0·03	0·01	—	0·00	—
(*c*2)	Pemphigus neonatorum ...	M.	0·04	—	—	—	—	—	—	—	—	—	—	—	0·01	0·01	0·01	0·03	0·01	0·00	—	—
		F.	0·04	—	—	—	0·00	—	—	—	—	0·00	0·00	0·00	0·01	0·00	0·01	0·03	0·01	—	—	—
(*c*3)	Other or unspecified infections included under 161 (*c*)	M.	0·11	—	—	—	—	0·00	0·00	—	—	0·00	0·01	0·01	0·02	0·03	0·02	0·08	0·03	—	—	—
		F.	0·04	—	—	—	—	—	0·00	—	—	—	0·00	0·00	0·01	0·01	0·01	0·03	0·01	—	—	—
(*d*)	Melæna neonatorum ...	M.	0·45	—	0·03	0·03	0·04	0·09	0·07	0·03	0·04	0·02	0·29	0·32	0·08	0·03	0·01	0·44	0·01	—	—	—
		F.	0·33	—	0·03	0·03	0·03	0·05	0·04	0·04	0·02	0·02	0·19	0·23	0·06	0·02	0·01	0·31	0·02	—	—	—
(*e*1)	Hæmolytic diseases of the newborn	M.	0·92	0·02	0·11	0·13	0·06	0·11	0·13	0·09	0·06	0·04	0·49	0·61	0·14	0·04	0·05	0·84	0·07	0·01	0·00	—
		F.	0·57	0·02	0·07	0·09	0·05	0·07	0·07	0·07	0·05	0·02	0·32	0·41	0·07	0·03	0·01	0·53	0·03	0·01	—	0·00
(*e*2)	Other diseases included under 161 (*e*)	M.	0·12	0·01	0·02	0·03	0·02	0·01	0·00	0·01	0·01	0·01	0·05	0·08	0·03	0·00	—	0·11	0·01	—	—	—
		F.	0·08	0·00	0·02	0·03	0·00	0·00	0·00	0·00	0·00	—	0·02	0·05	0·03	0·01	—	0·08	0·00	0·00	—	—
	Other causes	M.	6·52	0·21	0·04	0·25	0·04	0·08	0·05	0·03	0·02	0·02	0·24	0·48	0·18	0·17	0·18	1·01	1·45	1·80	1·23	1·03
		F.	5·42	0·20	0·07	0·27	0·03	0·04	0·04	0·01	0·03	0·02	0·18	0·44	0·15	0·15	0·16	0·90	1·13	1·43	1·07	0·89

Certified causes of Infant Mortality.

Causes of infant mortality during the first year of life as a whole are shown in Tables 11 and 12 (Part I) for a series of years. The numbers of deaths with more detail of cause and age are given in Table 22 and a full age analysis of certain causes in Table 13A of each Review. In the lower part of Table XIV rates for all infants under one year and separately for infants under four weeks are given for the more important causes from 1936–39 to 1947. For infants under one year, causes which were certified less often in 1947 than in 1936–39 included tuberculosis, convulsions, bronchitis and pneumonia, congenital malformations, premature birth and the group of " other and ill-defined causes " ; while causes which, on the basis of death certification, increased in frequency were asphyxia and atelectasis, hæmolytic disease, and violence. In respect of neonatal deaths, causes which declined in importance were the infective diseases, bronchitis, congenital malformations, premature birth and congenital debility, while the importance of pneumonia, the diarrhœal diseases, asphyxia and hæmolytic disease tended to increase.

Table XXIa, b, gives infant mortality rates from the principal causes at various ages during the first year of life for each year 1946 and 1947, based on numbers of deaths given in Table 13A.

Among the infants dying within the first 24 hours the most commonly assigned cause of death was prematurity with a rate (male and female combined) of 4·67 per thousand in 1946 and 4·07 in 1947. At 1–7 days prematurity continued to predominate with rates of 3·90 in 1946 and 3·46 in 1947. Between the third and fourth weeks prematurity gave way to pneumonia, which continued to be the principal cause of death during the remainder of the first year of life, followed at each stage by the diarrhœal diseases. In 1947 the mortality rates from prematurity, pneumonia, enteritis and diarrhœa at different ages within the first year were :—

	Total under 4 weeks	4 weeks –3 months	3–6 months	6–9 months	9–12 months
Premature birth	9·11	0·37	0·02	0·00	0·00
Pneumonia ...	1·27	1·92	1·92	1·14	0·59
Enteritis and Diarrhœa ...	0·75	1·64	1·54	0·87	0·35

The number of infant deaths certified to accidental mechanical suffocation was 333 in 1931 and 384 in 1939. Thereafter increase was rapid and deaths so certified in 1946 and 1947 numbered 725 and 911 respectively. The increase was more than can be accounted for by a larger number of births ; as the following table shows, the infant death rate (male) from this cause was 0·53 in 1931, 0·72 in 1939, 1·05 in 1946 and 1·14 in 1947, corresponding female rates being 0·50, 0·51, 0·85 and 0·87.

	DEATHS UNDER 1 YEAR			DEATH RATE AT AGES UNDER 1 YEAR							
	No. (both sexes)	Rate (Male)	Rate (Female)	Under 4 weeks		4 weeks–3 months		3–6 months		6–12 months	
				M.	F.	M.	F.	M.	F.	M.	F.
1931	333	0·53	0·50	0·22	0·17	0·17	0·16	0·11	0·12	0·03	0·05
1932	345	0·61	0·49	0·21	0·17	0·16	0·15	0·18	0·13	0·06	0·04
1933	305	0·61	0·41	0·22	0·15	0·16	0·11	0·18	0·10	0·05	0·05
1934	308	0·54	0·49	0·20	0·15	0·15	0·18	0·15	0·09	0·04	0·07
1935	289	0·54	0·42	0·15	0·12	0·16	0·14	0·13	0·11	0·10	0·05
1936	325	0·59	0·49	0·13	0·13	0·17	0·16	0·22	0·16	0·07	0·04
1937	327	0·64	0·43	0·15	0·10	0·19	0·15	0·23	0·11	0·07	0·07
1938	347	0·64	0·48	0·13	0·12	0·22	0·15	0·21	0·15	0·08	0·06
1939	384	0·72	0·51	0·15	0·12	0·25	0·16	0·25	0·17	0·07	0·06
1940	446	0·89	0·60	0·14	0·13	0·31	0·21	0·30	0·18	0·14	0·08
1941	536	1·05	0·82	0·19	0·16	0·38	0·25	0·34	0·29	0·14	0·12
1942	505	0·89	0·70	0·14	0·11	0·32	0·26	0·32	0·23	0·11	0·10
1943	487	0·89	0·53	0·10	0·07	0·37	0·21	0·30	0·18	0·12	0·07
1944	641	0·97	0·79	0·13	0·08	0·37	0·32	0·35	0·29	0·12	0·10
1945	600	0·97	0·74	0·12	0·10	0·42	0·29	0·31	0·25	0·12	0·10
1946	725	1·05	0·85	0·11	0·13	0·41	0·33	0·40	0·27	0·13	0·12
1947	911	1·14	0·87	0·16	0·18	0·38	0·31	0·48	0·26	0·12	0·12

The death rates increased at each age of infancy with the exception of the first four weeks.

The regional distribution of these deaths in 1946 and 1947, according to the reported circumstances of suffocation, is shown in the next table.

		England and Wales		London and S.E.		North		Midlands		East		South West		Wales	
		1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
In bed	M.	109	123	25	26	50	58	19	21	3	4	6	6	6	8
	F.	103	119	21	23	48	52	15	19	4	6	8	4	7	15
In cot, cradle, etc....	M.	123	137	44	55	36	45	27	19	2	6	9	5	5	7
	F.	75	94	35	39	22	28	9	14	3	5	2	1	4	7
By food	M.	154	241	52	80	56	68	24	40	7	15	10	19	5	19
	F.	116	144	46	48	35	56	20	18	4	5	5	8	6	9
Dummy or teat ...	M.	3	1	2	1	1	—	—	—	—	—	—	—	—	—
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By other means ...	M.	22	26	5	9	9	11	2	2	—	—	5	—	1	4
	F.	20	26	3	3	9	14	3	3	1	2	3	2	1	2
Total...	M.	411	528	128	171	152	182	72	82	12	25	30	30	17	38
	F.	314	383	105	113	114	150	47	54	12	18	18	15	18	33
	P.	725	911	233	284	266	332	119	136	24	43	48	45	35	71

Suggestions have recently been made in England, (1) in America, (2) and in Australia (3) that death in infancy as a result of accidental mechanical suffocation is a much rarer event than the official statistics of deaths attributed to this cause indicate. It has been claimed that practically all the infants alleged to have died in this way have in fact been the victims of sudden unrecognised illness, usually a fulminating respiratory infection, and that only a thorough post-mortem examination would in most cases reveal the true cause of death. Whether or not this is true it still remains difficult to account for the progressively increasing number of deaths *certified* as resulting from accidental mechanical suffocation.

(1) Davison, W. H. (1945), Brit. Med. J. 2, 251.
(2) Bowden, K. (1950), Med. J. Australia 1, 65.
(3) Leading Article (1950), J. Am. Med. Ass. 1, 1,296.

Table XXII.—Infant Mortality by Cause, Sex and Legitimacy, 1946 and 1947.

		Rates per 1,000 related live births						Mortality ratios			
		Legitimate		Illegitimate		All Infants		Male per cent. of Female rate		Illegitimate per cent. of Legitimate rate	
		Male	Female	Male	Female	Male	Female	All Infants	Illegitimate	Male	Female
	1946										
All causes	Under 4 weeks	27·15	20·32	36·43	29·87	27·77	20·96	132	122	134	147
	4 weeks–3 months	7·66	5·70	14·79	10·16	8·16	6·02	136	146	193	178
	3–6 months	6·43	5·25	10·05	6·88	6·71	5·38	125	146	156	131
	6–9 months	3·55	2·98	4·55	3·56	3·63	3·03	120	128	128	119
	9–12 months	2·01	1·74	1·92	1·59	2·00	1·73	116	121	96	91
All ages under one year	Whooping cough	0·66	0·76	0·58	0·63	0·64	0·76	84	92	88	83
	Tuberculous diseases	0·42	0·38	0·33	0·34	0·42	0·38	111	97	79	89
	Measles	0·11	0·13	0·11	0·06	0·12	0·13	92	183	100	46
	Convulsions	0·51	0·35	0·66	0·50	0·51	0·35	146	132	129	143
	Bronchitis and pneumonia	8·54	7·01	12·42	8·42	8·82	7·12	124	148	145	120
	Enteritis and diarrhœa	4·79	3·50	9·38	5·82	5·12	3·66	140	161	196	166
	Congenital malformations	6·00	4·88	6·06	4·32	6·00	4·84	124	140	101	89
	Premature birth	11·99	9·08	16·56	13·80	12·31	9·40	131	120	138	152
	Injury at birth	3·31	1·96	3·77	2·83	3·34	2·02	165	133	114	144
	Asphyxia, atelectasis	3·30	2·43	3·98	3·03	3·35	2·47	136	131	121	125
	Hæmolytic diseases	0·81	0·59	0·57	0·38	0·79	0·58	136	150	70	64
	Violence	1·37	1·23	2·10	1·79	1·42	1·26	113	117	153	146
	Other and ill-defined causes	4·99	3·69	11·22	10·14	5·43	4·15	131	111	225	275
	All causes	**46·80**	**35·99**	**67·74**	**52·06**	**48·27**	**37·12**	**130**	**130**	**145**	**145**
	1947										
All causes	Under 4 weeks	24·88	19·15	35·05	31·60	25·41	19·82	128	111	141	165
	4 weeks–3 months	7·73	5·58	12·71	8·96	7·99	5·76	139	142	164	161
	3–6 months	6·52	5·26	8·95	7·25	6·65	5·37	124	123	137	138
	6–9 months	3·93	3·24	3·55	4·14	3·91	3·29	119	86	90	128
	9–12 months	2·32	1·94	2·06	1·59	2·31	1·92	120	130	89	82
All ages under one year	Whooping cough	0·56	0·72	0·58	0·62	0·55	0·70	79	94	104	86
	Tuberculous diseases	0·44	0·32	0·31	0·32	0·44	0·32	138	97	70	100
	Measles	0·32	0·25	0·19	0·24	0·31	0·25	124	79	59	96
	Convulsions	0·41	0·26	0·52	0·43	0·40	0·27	148	121	127	165
	Bronchitis and pneumonia	8·54	6·78	10·55	8·36	8·65	6·87	126	126	124	123
	Enteritis and diarrhœa	5·69	4·12	9·46	8·01	5·88	4·33	136	118	166	194
	Congenital malformations	5·25	4·51	4·73	5·05	5·22	4·54	115	94	90	112
	Premature birth	10·30	8·13	14·57	13·55	10·53	8·42	125	108	141	167
	Injury at birth	3·27	2·12	3·61	2·62	3·28	2·15	153	138	110	124
	Asphyxia, atelectasis	3·20	2·51	4·86	2·36	3·29	2·50	132	206	152	94
	Hæmolytic diseases	0·93	0·55	0·87	0·83	0·92	0·57	161	105	94	151
	Violence	1·50	1·28	2·09	1·87	1·53	1·32	116	112	139	146
	Other and ill-defined causes	4·97	3·62	9·98	9·28	5·27	3·92	134	108	201	256
	All causes	**45·38**	**35·17**	**62·32**	**53·54**	**46·27**	**36·16**	**128**	**116**	**137**	**152**

Table XXII compares mortality from certain causes amongst male and female and amongst legitimate and illegitimate infants. The male infant mortality rate from all causes combined has consistently exceeded that of females, and from certain causes the male excess has tended, year after year, to be large. Male death rates expressed as percentages of the female rates in respect of certain causes in which a male excess has been particularly noticeable are shown for periods since 1938 :—

Cause of Death	1938	1939	1940–42	1943–45	1946	1947
Convulsions	145	147	150	151	146	148
Enteritis and diarrhœa	148	136	141	137	140	136
Injury at birth	173	173	151	155	165	153

In contrast whooping cough has invariably shown an excess of female mortality. A similar female excess has repeatedly occurred in deaths from spina bifida and meningocele, and in respect of monstrosities, as shown by the ratios below.

Cause of Death	1938	1939	1940–42	1943–45	1946	1947
Whooping cough ...	82	88	85	84	84	79
Spina bifida and meningocele ...	67	64	67	64	73	62
Monstrosities	74	53	59	55	76	78

The other congenital malformations responsible for deaths during infancy do not show this female excess. In 1946 and 1947 the male/female sex ratios for infant mortality from congenital abnormalities as a whole were 124 and 115 respectively.

The last two columns of Table XXII express the infant mortality of illegitimate as a percentage of that of legitimate children. Causes of death with conspicuously high rates among illegitimate infants in 1946 and 1947 were enteritis and diarrhœa, violence, prematurity and the group of " other and ill-defined causes ".

Table XXIII gives rates of infant mortality from the principal causes in 1946 and 1947 for each of the main regions and compares them with average rates for England and Wales.

In Greater London the infant death rate from violence in 1946 was 149 per hundred thousand related live births, 10 per cent. above the national average. This may be compared with an excess of 12 per cent. in 1939, 19 per cent. in 1940–42 and 14 per cent. in 1943–45, the last two percentages reflecting the effects of enemy action during the war. In 1947, however, the Greater London death rate from violence, 137 per hundred thousand, was 4 per cent. lower than that of the country as a whole. Mortality rates from congenital debility and from convulsions in Greater London have tended always to be much below average and in 1947 they were only 30 and 17 per cent. of the national rates.

In the remainder of the South East the rates from " all causes " during 1946 and 1947 were similar to those of Greater London, but the rates from violence were slightly lower and rates for congenital debility and convulsions higher, though distinctly below those of England and Wales.

In the North region, where total infant mortality rates were 20 per cent. higher in 1946 and 23 per cent. higher in 1947 than the national rates, each listed cause of death during 1946 and 1947 shared in the excess. In 1947 this excess was greatest for measles (67 per cent.), tuberculosis (34 per cent.), diarrhœa and enteritis (52 per cent.), congenital debility (48 per cent.), and convulsions (46 per cent.). Birth injury, however, showed no appreciable excess.

In the Midland region the infant mortality rate from all causes has always been very close to the national average. In 1946 and 1947 the only causes showing any large divergence from this average in both years were measles (17 per cent. below in 1946 and 22 per cent., above in 1947), convulsions (23 and 20 per cent. below) and injury at birth (18 and 19 per cent.).

The South West region showed rather high rates for birth injury in the two years. Deaths from violence were exceptionally high in 1946, the rate being 41 per cent. above the national rate, but in 1947 the rate was not above the average.

Table XXIII.—Comparison of Infant Mortality from the Principal Causes in Geographical Regions—Rates per 100,000 Related Live Births in 1946 and 1947 and per cent. of the England and Wales Rate.

Cause	Rates per 100,000 Related Live Births		Per cent. of England & Wales		Rates per 100,000 Related Live Births		Per cent. of England & Wales		Rates per 100,000 Related Live Births		Per cent. of England & Wales		Rates per 100,000 Related Live Births		Per cent. of England & Wales	
	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
	ENGLAND AND WALES				GREATER LONDON				REMAINDER OF SOUTH EAST				NORTH REGION			
Measles	12	27	100	100	10	12	83	44	4	14	33	52	22	45	183	167
Whooping cough	69	63	100	100	45	63	65	100	54	47	78	75	94	71	136	113
Tuberculosis	40	38	100	100	33	31	83	82	36	23	90	61	47	51	118	134
Bronchitis and pneumonia	799	778	100	100	613	603	77	78	527	545	66	70	1,029	991	129	127
Diarrhœa and enteritis	440	515	100	100	326	350	74	68	295	316	67	61	632	781	144	152
Congenital malformations	543	488	100	100	492	414	91	85	475	463	87	95	586	555	108	114
Premature birth	1,089	950	100	100	846	680	78	72	897	818	82	86	1,292	1,152	119	121
Injury at birth	271	273	100	100	218	230	80	84	243	238	90	87	286	281	106	103
Violence	135	143	100	100	149	137	110	96	103	133	76	93	149	157	110	110
Congenital debility	78	71	100	100	25	21	32	30	65	44	83	62	104	105	133	148
Convulsions	43	35	100	100	7	6	16	17	24	13	56	37	71	51	165	146
Other causes	766	756	100	100	706	671	92	89	698	683	91	90	837	829	109	110
All Causes (Under 1 year	4,285	4,137	100	100	3,470	3,218	81	78	3,421	3,337	80	81	5,149	5,069	120	123
All Causes (Under 1 month	2,446	2,270	100	100	2,086	1,833	85	81	2,135	1,991	87	88	2,753	2,600	113	115
	MIDLAND REGION				EAST REGION				SOUTH WEST REGION				WALES			
Measles	10	33	83	122	15	7	125	26	3	17	25	63	—	43	—	159
Whooping cough	69	66	100	105	69	61	100	97	53	45	77	71	83	69	120	110
Tuberculosis	38	36	95	95	27	45	68	118	31	28	78	74	65	38	163	100
Bronchitis and pneumonia	894	796	112	102	572	587	72	75	613	564	77	72	869	1,022	109	131
Diarrhœa and enteritis	478	466	109	90	252	289	57	56	182	310	41	60	391	548	89	106
Congenital malformations	561	492	103	101	499	451	92	92	589	423	108	87	612	521	113	107
Premature birth	1,104	921	101	97	1,022	936	94	99	1,122	935	103	98	1,244	1,180	114	124
Injury at birth	321	326	118	119	238	302	88	111	302	292	111	107	275	257	101	94
Violence	120	123	89	86	105	146	78	102	191	136	141	95	108	169	80	118
Congenital debility	95	70	122	99	72	80	92	113	79	66	101	93	104	104	133	146
Convulsions	33	28	77	80	31	22	72	63	18	18	42	51	142	132	330	377
Other causes	763	752	100	99	645	666	84	88	705	737	92	97	818	830	107	110
All Causes (Under 1 year	4,486	4,109	105	99	3,547	3,592	83	87	3,888	3,571	91	86	4,711	4,913	110	119
All Causes (Under 1 month	2,560	2,260	105	100	2,127	2,181	87	96	2,470	2,417	101	106	2,610	2,528	107	111

In Wales in 1946 there were no infant deaths attributed to measles but in 1947 the measles death rate was 59 per cent. above the rate for England and Wales. Convulsions have constantly been certified as the cause of infant death much more often in Wales than in England, and in 1946 and 1947 the Welsh rate was between three and four times the national average. In comparison with the national rates tuberculosis showed an excess of 63 per cent. in 1946, but no excess in 1947, the death rate from violence was 20 per cent. below in 1946 and 18 per cent. above in 1947, congenital debility continued to show an excess and, in contrast with the North of England, diarrhœa and enteritis in Wales had no appreciable excess.

Table XXIV.—Mortality from all causes per million population 1936-39 and each year 1940 to 1947.

	1936–39	1940	1941	1942	1943	1944	1945	1946	1947
	MALES (Civilians from 3rd September, 1939)								
All Ages									
Crude	12,885	16,127	15,692	14,408	15,282	15,252	14,955	13,400	13,550
C.M.I. ...	1·038	1·187	1·096	0·967	0·978	0·952	0·920	0·889	0·921
Ages under 65									
E.A.R. ...	8,468	10,016	9,489	8,187	8,357	8,227	7,805	7,193	7,217
0–	17,457	17,525	18,244	15,648	15,584	14,784	13,699	13,417	13,547
5–	1,924	2,119	2,250	1,681	1,610	1,575	1,354	971	1,039
10–	1,220	1,479	1,497	1,162	1,095	1,181	1,030	858	782
15–	2,012	2,763	2,938	2,123	2,115	1,952	1,794	1,524	1,620
20–	2,769	4,801	5,566	4,753	5,045	4,789	4,749	2,659	2,053
25–	2,882	4,084	4,643	3,854	4,038	4,287	3,838	2,241	2,121
35–	4,727	5,838	5,637	4,673	4,762	4,749	4,196	3,545	3,436
45–	10,615	12,503	11,026	9,576	9,952	9,617	9,104	8,941	8,983
55–	24,124	28,335	25,123	22,432	22,844	22,685	22,279	22,312	22,850
65–	55,602	61,274	55,209	51,171	51,413	50,614	50,325	49,723	52,537
75–	136,229	151,846	134,598	120,661	122,596	116,457	115,696	117,444	125,863
85 and over ...	281,766	303,200	258,762	232,867	234,137	211,964	204,717	232,328	266,526
	FEMALES (Civilians from 1st June, 1941)								
All Ages									
Crude	11,315	12,864	11,810	10,660	11,260	10,842	10,846	10,901	11,268
C.M.I. ...	1·054	1·156	1·043	0·916	0·944	0·894	0·875	0·875	0·892
Ages under 65									
E.A.R. ...	6,179	6,731	6,250	5,413	5,455	5,232	4,962	4,807	4,765
0–	13,758	13,635	14,547	12,274	12,432	11,701	10,787	10,336	10,576
5–	1,683	1,803	1,862	1,313	1,184	1,173	1,008	745	753
10–	1,083	1,310	1,240	915	975	918	789	665	611
15–	1,752	2,323	2,277	1,727	1,687	1,547	1,380	1,169	1,211
20–	2,395	2,865	2,809	2,408	2,359	2,356	2,092	1,782	1,820
25–	2,609	2,940	2,852	2,407	2,445	2,443	2,134	1,990	1,938
35–	3,751	4,135	3,765	3,220	3,321	3,114	2,923	2,789	2,741
45–	7,320	8,044	7,256	6,368	6,435	6,189	5,921	5,822	5,722
55–	16,151	17,663	15,382	13,871	13,940	13,414	13,250	13,299	13,083
65–	40,961	44,998	39,484	35,354	36,434	34,591	34,595	34,640	35,217
75–	104,634	116,409	101,843	91,022	95,948	89,750	90,161	92,383	96,588
85 and over ...	248,557	267,460	241,708	209,179	213,457	188,842	189,541	206,154	219,792
	BOTH SEXES (Non-civilians excluded as above)								
All Ages									
Crude	12,068	14,356	13,536	12,307	12,997	12,731	12,613	12,047	12,339
C.M.I. ...	1·045	1·171	1·070	0·942	0·957	0·918	0·893	0·881	0·906
0–	15,642	15,619	16,432	13,997	14,041	13,276	12,276	11,914	12,099
5–	1,805	1,963	2,059	1,500	1,401	1,377	1,184	860	899
10–	1,152	1,395	1,370	1,039	1,036	1,051	911	763	698
15–	1,882	2,535	2,589	1,913	1,879	1,726	1,563	1,328	1,389
20–	2,578	3,499	3,551	3,021	3,016	2,958	2,733	2,070	1,916
25–	2,742	3,443	3,532	2,925	2,970	3,012	2,666	2,102	2,026
35–	4,208	4,922	4,624	3,868	3,948	3,816	3,475	3,152	3,081
45–	8,837	10,070	8,973	7,823	8,019	7,729	7,364	7,254	7,237
55–	19,850	22,559	19,828	17,762	17,963	17,584	17,307	17,362	17,480
65–	47,514	52,269	46,503	42,402	43,090	41,682	41,513	41,272	42,776
75–	116,944	130,130	114,345	102,565	106,394	100,289	100,269	102,399	108,255
85 and over ...	259,188	278,717	247,176	216,793	220,218	196,459	194,544	214,541	234,429

Mortality at Ages over One Year.

Table XXIV gives the death rates per million living at different ages in five-year groups up to 24, ten-year groups from 25 to 84, and at ages 85 and over for 1936-39 and in each year 1940 to 1947. Crude rates at all ages, equivalent average rates at ages under 65 and comparative mortality indices at all ages are also shown. Non-civilian males have been excluded from 3rd September, 1939, and non-civilian females from 1st June, 1941, onwards, both from the population and from the deaths, which include those registered in England and Wales as due to operations of war.

Table XXV expresses the death rates shown in the preceding table for each year 1946 and 1947 as percentages of the corresponding rates in 1936–39. For comparison the death rates in 1944 and 1945 from all causes except operations of war (*see* Table XXIV of the Review for 1940–45 Text) are likewise expressed as percentages of the rates in 1936–39. At ages between 15 and 55 for males and between 20 and 35 for females the civilian rates in 1944 and 1945 were prejudiced by the absence of significant numbers of the healthiest individuals in the Armed Forces, and this was still true in 1946 for males between 15 and 50 and females aged 20–24. By 1947 female rates were not appreciably affected, but there were still large numbers of males between 15 and 35 in the services. The ratios of civilian per hundred total population at different ages in each year were as follows :—

Year	Males								Females	
	15–	20–	25–	30–	35–	40–	45–	50–54	20–	25–34
1944	76	29	35	52	69	85	94	97	87	97
1945	76	29	36	53	71	85	95	97	88	97
1946	78	47	76	87	93	96	98	99	95	99
1947	75	69	91	95	97	98	98	99	98	100

In the Review for 1940–45 (Text, page 56) it was estimated that in 1945 the non-civilian portion of the population of men aged 20–24 had become so selected as to be subject to a death rate 0·29 times that of the civilian residue.

If no selection on medical grounds occurred in the process of demobilization* and if other factors influencing the death rates remained constant during 1945–47 (apart from the deaths from operations of war in 1945 which are excluded), the 1945 civilian rate of 4·68 per 1,000 for men aged 20–24 would be expected to become $4{\cdot}68\ [29 + 0{\cdot}29\ (47-29)]/47 = 3{\cdot}41$ in 1946, and $4{\cdot}68\ [29 + 0{\cdot}29\ (69 - 29)]/69 = 2{\cdot}75$ in 1947. The actual rates experienced were 2·66 and 2·05 in those two years, more than 20 per cent. lower than expectation based on a redistribution of the civilian mortality of 1945.

For men aged 25–34 the non-civilians in 1945 were estimated to be subject by their selection to a rate 0·38 times that of the civilians, and this leads to the expectation that the civilian rate of 3·77 (excluding operations of war) in 1945 would become $3{\cdot}77\ [45 + 0{\cdot}38\ (82 - 45)]/82 = 2{\cdot}72$ in 1946, and $3{\cdot}77\ [45 + 0{\cdot}38\ (93 - 45)]/93 = 2{\cdot}56$ in 1947. The actual rates experienced were 2·24 and 2·12 in those years, about 20 per cent. lower than the expectation based on 1945 rates.

* Selection would occur by retaining some sick men until they were fit to be discharged and by hastening the discharge of disabled men who could not be further treated, but the net effect of this cannot be estimated.

Table XXV.—Mortality at Various Ages from All Causes except Operations of War in 1944 and 1945 and from All Causes in 1946 and 1947 per cent. of that for the same sex and age in 1936-39.

	Per cent. of 1936–39				Per cent. of 1921–30		Per cent. of 1931–35	
	1944	1945	1946	1947	1946	1947	1946	1947
	MALES							
All ages, Crude ...	116	116	104	105	104	105	105	106
Ages under 65 E.A.R.	94	91	85	85	73	73	80	81
0–	84	78	77	78	53	54	67	67
5–	75	68	50	54	39	41	43	46
10–	82	80	70	64	52	47	60	54
15–	86	86	76	81	58	62	62	66
20–	165	169	96	74	78	60	84	65
25–	139	131	78	74	58	55	68	64
35–	95	88	75	73	56	54	66	64
45–	87	85	84	85	77	77	80	81
55–	92	92	92	95	91	93	95	97
65–	90	90	89	94	85	90	88	93
75–	85	85	86	92	87	93	87	93
85 and over... ...	74	73	82	95	81	93	83	96
	FEMALES							
All ages, Crude ...	94	95	96	100	96	99	96	99
Ages under 65 E.A.R.	81	79	78	77	62	62	70	69
0–	84	78	75	77	51	52	65	66
5–	63	57	44	45	32	32	36	36
10–	73	70	61	56	41	37	48	45
15–	79	76	67	69	47	49	53	55
20–	89	85	74	76	59	60	64	66
25–	86	80	76	74	58	56	64	63
35–	78	76	74	73	57	56	64	63
45–	81	80	80	78	68	66	73	72
55–	81	82	82	81	73	71	78	77
65–	84	84	85	86	77	78	81	82
75–	85	86	88	92	83	87	85	89
85 and over... ...	76	76	83	88	83	89	84	90

Comparisons in Table XXV, however, are based on the mean annual rates experienced by the whole population in the pre-war period, 1936–39, and it is necessary to estimate to what extent the indices in that table were affected by the fact that civilian rates in years 1944 to 1947 are being expressed in terms of total rates in 1936–39 taken as 100. A calculation on page 69 of the Review for 1940–45, Text, led to the conclusion that towards the end of the war non-civilians had become so selected that they would have been liable to a mortality about 53 per cent. of the average for their age if they had remained civilians *. Assuming that this ratio was still applicable in 1946–47 despite

* Deaths of civilians from operations of war were excluded in the calculation and the estimate of 53 per cent. may be regarded as applicable, therefore, to the indices for 1944 and 1945 in Table XXV.

the disturbances caused by demobilization, it follows that, if in a particular year ' p ' per cent. at a given age were civilians, the expected civilian index ' C ' in terms of the total rate in 1936–39 taken as 100 would be given by the formula :—

$$C = \frac{4{,}700}{p} + 53.$$

The values of ' p ' have been given above for the affected sex-age groups in each year 1944 to 1947, and the indices to be expected for males if no change in total mortality occurred after 1936–39 are shown below :—

Age group (l.b.d.)	Expected indices			
	1944	1945	1946	1947
15–	115	115	113	116
20–	215	215	153	121
25–	187	184	115	105
30–	143	142	107	102
35–	121	119	104	101
40–	108	108	102	101
45–49 ...	103	102	101	101

These correction factors can be applied when considering the trends of the actual death rates of males in order to estimate the real trends in a population not subjected to selection, and references are made to them in the sections dealing with separate age groups on pages 61 to 63.

Young Children (Ages 1-4).—Table XXVI shows the death rates of children aged 1, 2, 3 and 4 years, crude rate at 1–4 and equivalent average rate supposing the populations to be equal at each year of age. Total rates without distinction of sex are first given in 1911–14, 1921–30, 1931–40 and in each year 1941 to 1947. Rates for each sex in 1931–35, 1936–39 and each year 1941 to 1947 (excluding deaths from operations of war in 1941–45) are then given, and are expressed also as percentages of the corresponding mean annual rate in 1936–39.

Table XXVI.—Mortality per 1,000 living from All Causes, including and excluding Operations of War, at ages 1-4, 1921-30, 1931-40, 1931-35, 1936-39 and each year 1941 to 1947. Rates per cent. of 1936-39.

Age (l.b.d.)	1921–30	1931–40	1941	1942	1943	1944	1945	1946	1947
All Causes. Both Sexes (*Death rate per 1,000 living*)									
1	19·70	10·89	9·27	5·95	5·80	4·57	4·20	3·49	4·04
2	8·44	5·05	4·90	3·10	3·12	2·56	2·40	1·85	2·02
3	5·18	3·63	3·84	2·57	2·40	2·15	2·00	1·51	1·43
4	3·88	3·03	3·20	2·23	2·02	1·81	1·65	1·33	1·17
1—4 Crude ...	9·40	5·65	5·30	3·42	3·34	2·84	2·64	2·08	2·17
E.A.R.	9·30	5·65	5·30	3·46	3·34	2·77	2·56	2·05	2·16
	1931–35	1936–39	1941	1942	1943	1944	1945	1946	1947
All Causes (*Except Operations of War in 1941–45*)									
Males (*Death rate per 1,000 living*)									
1	13·89	9·32	9·34	6·37	5·94	4·60	4·39	3·67	4·34
2	6·09	4·34	4·82	3·27	3·27	2·69	2·48	1·98	2·21
3	4·22	3·22	3·78	2·67	2·56	2·20	2·09	1·69	1·63
4	3·45	2·81	3·09	2·41	1·97	1·85	1·84	1·55	1·30
1—4 Crude ...	6·87	4·96	5·25	3·63	3·45	2·90	2·78	2·26	2·38
E.A.R.	6·91	4·92	5·26	3·68	3·44	2·84	2·70	2·22	2·37
Females (*Death rate per 1,000 living*)									
1	12·27	8·10	8·51	5·41	5·57	4·20	3·90	3·29	3·72
2	5·58	3·95	4·34	2·79	2·88	2·19	2·23	1·73	1·81
3	3·98	2·88	3·33	2·38	2·12	1·83	1·82	1·33	1·22
4	3·25	2·50	2·64	1·88	1·94	1·50	1·36	1·10	1·03
1—4 Crude ...	6·23	4·38	4·70	3·08	3·13	2·49	2·40	1·90	1·96
E.A.R.	6·27	4·36	4·71	3·12	3·13	2·43	2·33	1·86	1·95
Males (*Per cent. of rate in 1936–39*)									
1	149	100	100	68	64	49	47	39	47
2	140	100	111	75	75	62	57	46	51
3	131	100	117	83	80	68	65	52	51
4	123	100	110	86	70	66	65	55	46
Females (*Per cent. of rate in 1936–39*)									
1	151	100	105	67	69	52	48	41	46
2	141	100	110	71	73	55	56	44	46
3	138	100	116	83	74	64	63	46	42
4	130	100	106	75	78	60	54	44	41

Mortality again declined greatly in 1946 at each age, the fall compared with 1945 rates amounting to 16 per cent. for each sex at age one, 20 and 22 per cent. for boys and girls at age two, 19 and 27 per cent. at age three, 16 and 19 per cent. at age four. In 1947 the rates at age one increased again for each sex almost to 1945 levels, and at age two they increased to a smaller extent, but at ages three and four the decline in mortality continued. The equivalent average rate at ages 1–4 for boys fell by 18 per cent. in 1946 and then increased by seven per cent. in 1947 ; for girls it fell by 20 per cent. and then increased by five per cent.

Comparison with 1936–39 shows that the rates have fallen by about one-half for boys and by rather more than that for girls, the greatest improvement being for girls between 3 and 5 years of age.

Abridged life tables* constructed from the death rates of 1947 show that out of 10,000 of each sex born alive 9,448 boys and 9,564 girls would be expected to survive to their fifth birthday compared with 9,007 and 9,202 respectively according to the national life table for 1930–32, and 8,263 and 8,501 according to that for 1910–12. In 1946 the expectations were not quite so good, since the higher rates at ages under one, three and four in that year more than offset the lower rates at ages one and two. The expectation of surviving five years from birth reached 95 per cent. for infants born in 1947, compared with 91 per cent. for those born about 1931 and less than 84 per cent. for those born about 1911.

The relative excess of boys' over girls' mortality at ages 1–4 continues to increase, as may be seen by the sex ratio between the equivalent average rates, which was 1·10 in 1931–35, 1·13 in 1936–39, 1·19 in 1946 and 1·22 in 1947.

Table XXVII shows the regional distribution of death rates of children without distinction of sex at ages one and 2–4 in each year 1944 to 1947, and compares the rates in 1946 and 1947 with the national rate of the same year in each instance, and with the mean annual rates in 1936–39.

The constitution of the Regional Divisions of England and Wales used in this volume is as follows:—

Greater London.
The aggregate of the City of London and of the Boroughs and County districts falling entirely within the area of the Metropolitan Police District as defined in the Police Act, 1946.

South East.
Bedfordshire.
Berkshire.
Buckinghamshire.
Essex.
Hertfordshire.
Kent.
London.
Middlesex.
Oxfordshire.
Southampton.
Surrey.
Sussex, East.
Sussex, West.
Wight, Isle of.

North I.
Durham.
Northumberland.

North II.
Cumberland.
Westmorland.
Yorkshire, E. Riding.
Yorkshire, N. Riding.

North III.
Yorkshire, W. Riding.
York, C.B.

North IV.
Cheshire.
Lancashire.

Midland I.
Gloucestershire.
Herefordshire.
Shropshire.
Staffordshire.
Warwickshire.
Worcestershire.

Midland II.
Derbyshire.
Leicestershire.
Northamptonshire.
Nottinghamshire.
Peterborough, Soke of

East.
Cambridgeshire.
Ely, Isle of.
Huntingdonshire.
Lincolnshire—
Parts of Holland.
Parts of Kesteven.
Parts of Lindsey.
Norfolk.
Rutlandshire.
Suffolk, East.
Suffolk, West.

South West.
Cornwall.
Devonshire.
Dorsetshire.
Somersetshire.
Wiltshire.

Wales I.
Brecknockshire.
Carmarthenshire.
Glamorganshire.
Monmouthshire.

Wales II.
Anglesey.
Caernarvonshire.
Cardiganshire.
Denbighshire.
Flintshire.
Merionethshire.
Montgomeryshire.
Pembrokeshire.
Radnorshire.

* See Appendix "B" on page 312.

Table XXVII.—Mortality in Early Childhood : distribution at ages 1 and 2-4 in 1944 to 1947. Rates in 1946 and 1947 per cent. of 1936-39 and of National Rate.

Area	Age 1 (second year of life)							
	Rates per 1,000 living (both sexes)				Mortality per cent. of 1936–39		Mortality per cent. of National Rate	
	1944	1945	1946	1947	1946	1947	1946	1947
England and Wales	**4·57**	**4·21**	**3·49**	**4·04**	**40**	**46**	**100**	**100**
South East	4·27	3·45	2·84	3·22	40	46	81	80
Greater London	4·54	3·22	2·77	3·11	36	40	79	77
Remainder of South East	3·99	3·70	2·93	3·35	48	55	84	83
North	5·04	4·82	4·14	4·91	38	45	119	122
North I	5·46	5·71	5·06	5·40	44	47	145	134
North II	5·64	4·53	3·24	4·14	28	36	93	102
North III	4·52	4·75	4·04	3·99	42	41	116	99
North IV	5·04	4·60	4·05	5·44	36	48	116	135
Midland	4·66	4·34	3·38	4·17	39	48	97	103
Midland I	4·51	4·48	3·32	4·17	37	46	95	103
Midland II	4·99	4·04	3·52	4·17	44	52	101	103
East	4·10	3·76	3·43	3·05	52	46	98	75
South West	3·93	3·92	3·00	3·77	47	59	86	93
Wales	4·25	5·07	4·38	4·64	47	50	126	115
Wales I	4·71	5·37	4·54	4·48	46	45	130	111
Wales II	3·10	4·30	3·96	5·09	50	65	113	126
Density Summary :								
County Boroughs (excluding Greater London)	5·26	4·84	4·10	5·06	38	47	117	125
Other Urban Districts (excluding Greater London)	4·16	4·26	3·36	3·89	41	47	96	96
Rural Districts (excluding Greater London)	4·26	3·98	3·38	3·52	48	50	97	87
Greater London								
Administrative County	5·80	3·78	3·49	3·73	37	40	100	92
Outer Ring	3·87	2·90	2·34	2·73	37	43	67	68

	Ages 2–4 years (third, fourth and fifth years of life)							
England and Wales	**2·18**	**2·03**	**1·58**	**1·54**	**48**	**47**	**100**	**100**
South East	2·02	1·76	1·30	1·28	51	50	82	83
Greater London	2·17	1·70	1·31	1·19	49	44	83	77
Remainder of South East	1·86	1·82	1·29	1·40	55	60	82	91
North	2·41	2·32	1·83	1·85	43	44	116	120
North I	2·78	2·54	2·14	1·85	48	42	135	120
North II	2·60	2·52	1·96	1·74	48	43	124	113
North III	2·05	2·22	1·50	1·86	39	48	95	121
North IV	2·45	2·25	1·87	1·88	43	43	118	122
Midland	2·01	1·94	1·56	1·55	49	48	99	101
Midland I	2·00	2·04	1·58	1·63	49	51	100	106
Midland II	2·02	1·75	1·51	1·38	48	44	96	90
East	2·06	1·99	1·41	1·16	58	48	89	75
South West	1·74	1·81	1·58	1·39	65	57	100	90
Wales	2·66	2·47	1·99	1·77	52	46	126	115
Wales I	2·81	2·53	1·94	1·81	51	47	123	118
Wales II	2·28	2·32	2·13	1·66	56	44	135	108
Density Summary :								
County Boroughs (excluding Greater London)	2·33	2·20	1·69	1·72	43	44	107	112
Other Urban Districts (excluding Greater London)	2·15	2·11	1·59	1·61	47	48	101	105
Rural Districts (excluding Greater London)	1·99	1·94	1·65	1·49	61	55	104	97
Greater London								
Administrative County	3·02	2·03	1·60	1·28	52	42	101	83
Outer Ring	1·72	1·52	1·13	1·13	47	47	72	73

Table XXVIII.—Death rates from Various Infective Diseases per million living at ages 1-4 years in 1911-20 and each year 1921 to 1947.

Year	Measles	Scarlet Fever	Whooping Cough	Diphtheria	Influenza	Cerebro-Spinal (Meningo-coccal) Meningitis	Tuberculosis		Bronchitis and Pneumonia	Enteritis and Diarrhœa
							Meninges and Central Nervous System	Others		
1911–20 ...	2,279	253	1,091	811	581	55	696	809	4,441	1,212
1921	570	173	790	760	186	37	486	509	3,454	1,015
1922	1,447	201	1,702	706	606	40	537	507	4,662	413
1923	1,260	148	690	453	111	23	490	474	2,822	491
1924	1,093	131	663	428	363	26	479	470	3,520	435
1925	1,254	151	1,026	462	151	33	473	444	3,169	478
1926	802	92	694	463	132	34	439	400	2,909	515
1927	899	79	688	438	462	53	462	399	3,489	367
1928	1,061	81	530	492	95	41	390	361	2,351	377
1929	913	89	1,307	521	489	64	419	371	4,117	429
1930	1,080	102	371	539	49	62	386	312	1,873	283
1931	873	76	500	417	221	141	396	270	2,599	278
1932	935	81	557	378	146	120	394	286	2,016	273
1933	540	113	457	385	280	104	367	228	2,075	308
1934	1,057	145	413	593	57	74	350	215	1,840	218
1935	371	82	284	519	74	67	303	170	1,435	205
1936	753	72	382	453	76	70	285	180	1,501	182
1937	277	57	340	455	170	83	284	194	1,592	195
1938	424	58	218	412	60	68	282	168	1,305	181
1939	68	30	212	339	70	53	269	137	880	150
1940	208	19	128	398	130	248	276	160	1,356	162
1941	273	25	475	482	64	221	384	239	1,188	160
1942	111	12	133	303	47	131	302	164	719	113
1943	176	19	201	211	84	79	285	178	744	101
1944	56	14	144	140	40	67	259	153	545	109
1945	156	11	104	96	39	48	254	158	503	102
1946	35	3	109	66	43	53	209	125	410	69
1947	122	5	120	33	27	52	208	133	429	88

Table XXVIII gives death rates at ages 1–4 from the principal infective causes in 1911–20 and each year since 1921. Measles mortality reached a new low level of 35 per million in 1946, and the average of the rates in 1946 and 1947 was 79 compared with annual averages of 853 and 250 in the ten-year periods 1926–35 and 1936–45. Scarlet fever mortality averaged only four per million in 1946–47, compared with 89, 99, 47 and 16 in the quinquennial periods 1926–30, 1931–35, 1936–40 and 1941–45. Whooping cough increased slightly in 1946 and 1947, but the rate was only one third of that registered ten years previously. Diphtheria continued to decline steeply, as in each year since 1941, the percentage rates of fall in the six successive years having been 37, 30, 34, 31, 31 and 50. The average annual rate in 1921–30 was 526 per million, and in 1931–40 it was 435, but by 1947 it had fallen to 33.

Meningococcal meningitis mortality remained around 50 per million compared with about 70 in the inter-epidemic period 1934–39. Tuberculous meningitis decreased to new low levels of 209 and 208 per million, the lowest rate recorded before the war having been 269 in 1939. Other forms of tuberculosis likewise registered a considerable fall to 125 per million in 1946 and 133 in 1947, the previous lowest rate being 137 in 1939. The bronchitis and pneumonia rate reached new low values of 410 and 429, compared with 503 in 1945 and 880 in the exceptional year 1939. Enteritis and diarrhœa mortality fell to 69 per million in 1946, no previous rate below 100 having been recorded, and in 1947 it increased only slightly to 88.

Table XXIX gives the death rates in 1936–39 and each year 1941 to 1947 for a number of other causes and differentiates the tuberculosis deaths still further. The residual group "other causes" includes the non-tuberculous diseases shown in the preceding table, which accounted for 788 out of 1,015 per million in 1946 and 876 out of 1,156 in 1947. The respiratory tuberculosis death rate, which was 49 per million in 1936–39 and about 60 in 1942–45, fell to 53 in 1946 but returned to 61 in 1947. For intestines and peritoneum the rate fell to 23 and 21, compared with the previous lowest level of 36 in 1945; and other tuberculosis (excluding meningitis) also registered lower figures than in any previous year. The total non-respiratory tuberculosis rate in 1936–39 was 401, but by 1947 it had improved to 280.

Table XXIX.—Deaths from Various Causes per million living at Ages 1-4 years in 1936-39, and each year 1941 to 1947 (both sexes).

International List No.	Cause of Death	1936–39*	1941	1942	1943	1944	1945	1946	1947
	Tuberculosis :								
13	Respiratory System	49	77	59	61	61	59	53	61
14	Meninges and central nervous system	280	384	302	285	259	254	209	208
15	Intestines and peritoneum	50	62	44	45	37	36	23	21
16–22	Other Tuberculous diseases	71	100	60	72	55	62	49	51
45–55	Cancer and other malignant tumours ...	43	51	47	45	46	50	46	62
58	Rheumatic fever	12	10	8	7	8	11	7	6
70	Rickets	14	10	6	3	3	4	2	0
81	Meningitis (non-meningococcal) ...	80	75	55	55	49	38	34	35
85	Epilepsy	21	34	26	23	23	26	17	23
86	Convulsions	54	42	33	31	25	22	15	15
89	Diseases of ear and mastoid antrum ...	65	35	31	38	35	28	17	19
90–95	Heart diseases	22	13	14	11	12	9	8	5
105	Diseases of larynx	22	23	17	24	17	18	12	12
115 (*b*) (*c*)	Diseases of tonsils, pharynx, etc. ...	59	37	45	38	26	23	19	14
118 : 1	Inflammation of stomach	10	14	9	7	7	4	5	3
121	Appendicitis	68	48	39	38	48	41	40	38
122	Hernia, intestinal obstruction	37	44	32	29	32	27	23	20
130	Acute nephritis	21	24	20	20	18	17	15	9
157	Congenital malformations	102	133	122	123	126	17	118	120
181	Accidental burns	165	156	144	126	112	198	66	58
183	Accidental drowning	52	74	82	78	79	81	70	54
197	Operations of war	—	316	61	47	137	45	—	—
	Other violence	216	288	260	225	236	253	219	185
	Other causes	3,160	3,247	1,903	1,910	1,387	1,319	1,015	1,156
	All Causes	**4,674**	**5,296**	**3,424**	**3,342**	**2,839**	**2,642**	**2,082**	**2,175**

* Rates for 1936–39 are corrected to the 1940 classification.

Rheumatic fever and heart disease established new records of six and five per million in 1947, compared with 12 and 22 in 1936–39. Non-meningococcal meningitis had lower rates in 1946–47 than in any previous year ; and so did epilepsy and convulsions together. Ear and mastoid disease produced a death rate of 65 per million in 1936–39, and in 1941 to 1944 it was around 35, but in 1946–47 the rate fell again to half that figure. For diseases of the throat and larynx the rate was 81 in 1936–39 and around 60 in 1941–43, but this rate fell similarly to 31 in 1946 and 26 in 1947. Appendicitis showed little change, but the acute nephritis rate fell sharply to nine per million in 1947, compared with about 20 up to 1943. Rickets had six deaths in 1946 and only one in 1947.

Comparing the mortality of 1946–47 with that in 1936–39 and grouping the causes rather differently :—

Cause of death	Rates per million			Per cent. of 1936–39
	1936–39	1946	1947	1947
Measles, whooping cough, scarlet fever, diphtheria	1,137	213	280	25
Bronchitis, pneumonia, influenza ...	1,413	453	456	32
Diseases of throat, larynx, ear, mastoid...	146	48	45	31
Enteritis, appendicitis	245	109	126	51
Meningitis, all forms	428	296	295	69
Tuberculosis (except meningitis)... ...	170	125	133	78
Other non-violent causes	702	483	543	77
Violent causes	433	355	297	69
All causes	**4,674**	**2,082**	**2,175**	**47**

The degree of improvement during ten years was greatest for the group of common infectious diseases of childhood, and was almost as great for the respiratory, throat and ear conditions. For these groups mortality in 1947 was less than a third of that in 1936–39. Infective conditions of the intestines showed a fall of one half. Tuberculosis (excluding meningitis) lagged behind with a decrease of 22 per cent. Meningitis, in its various forms, which now accounts for a seventh of all deaths at ages 1–4, declined by 31 per cent.

Violent causes accounted for one death out of 11 in 1936–39, but the rate did not improve to the same extent as that for all non-violent causes ; and in 1947 one death out of seven was due to accidents or other violence. Accidental burns, however, showed a reduction in the resulting death rate similar to that for respiratory infections, the rate in 1947 being only 35 per cent. of that in 1936–39. The ratio of boys' to girls' deaths is higher for violent causes, being about 1·65, and this partly accounts for the rising sex-ratio amongst all deaths at this age, since these causes contribute an increasing proportion to the total. It is not the whole explanation, however, since the sex-ratio for non-violent deaths increased from 1·14 in 1939 to 1·23 in 1947.

Children of School Age (Ages 5-14).—Table XXX shows the trend of death rates of boys and girls aged 5–9 and 10–14 from all causes and from nine separate causes.

Table XXX.—Death rates at Ages 5-9 and 10-14 per million living from Various Causes, 1936-39 and each year 1941 to 1947.

Cause of death	1936–39*	1941	1942	1943	1944	1945	1946	1947
Ages 5–9 (l.b.d.)								
MALES								
Diphtheria	411	345	258	171	120	87	40	29
Tuberculosis	170	214	182	171	160	157	130	131
Meningitis (except Tuberculous)	58	114	63	57	39	30	25	20
Pneumonia	150	110	75	78	66	61	41	43
Rheumatic Fever and Endocarditis	77	49	35	49	67	55	33	32
Disease of Ear and Mastoid Antrum	57	16	24	31	30	10	12	10
Appendicitis	85	64	71	48	67	62	53	47
Violence (except War Operations)	361	523	486	481	494	498	328	381
All Causes (except War Operations)	**1,924**	**1,976**	**1,611**	**1,553**	**1,439**	**1,313**	**971**	**1,039**
Operations of War	—	274	70	58	136	42	—	—
FEMALES								
Diphtheria	450	367	272	164	122	95	50	28
Tuberculosis	155	219	150	158	152	163	149	128
Meningitis (except Tuberculous)	51	88	54	43	33	24	21	20
Pneumonia	133	104	69	66	48	43	41	38
Rheumatic Fever and Endocarditis	88	50	44	61	60	59	36	37
Disease of Ear and Mastoid Antrum	47	21	27	28	22	13	14	11
Appendicitis	61	44	37	42	42	43	31	37
Violence (except War Operations)	172	247	231	180	224	209	149	162
All Causes (except War Operations)	**1,683**	**1,595**	**1,263**	**1,135**	**1,055**	**966**	**745**	**753**
Operations of War	—	267	50	49	118	42	1	—
Ages 10–14 (l.b.d.)								
MALES								
Diphtheria	99	70	59	52	41	28	15	9
Tuberculosis	139	155	145	119	125	138	122	107
Meningitis (except Tuberculous)	29	52	41	20	25	13	11	13
Pneumonia	66	51	46	43	44	33	28	26
Rheumatic Fever and Endocarditis	114	76	65	72	78	80	66	58
Disease of Ear and Mastoid Antrum	33	24	22	22	14	17	14	11
Appendicitis	76	66	59	56	71	47	40	34
Violence (except War Operations)	234	350	280	265	279	302	247	228
All Causes (except War Operations)	**1,220**	**1,202**	**1,079**	**1,017**	**1,006**	**970**	**854**	**782**
Operations of War	—	296	83	79	175	60	4	—
FEMALES								
Diphtheria	105	86	64	50	33	25	10	7
Tuberculosis	193	215	180	175	167	180	159	146
Meningitis (except Tuberculous)	27	51	30	25	19	15	14	12
Pneumonia	62	45	38	50	46	32	27	30
Rheumatic Fever and Endocarditis	151	104	86	112	104	92	67	56
Disease of Ear and Mastoid Antrum	31	13	17	22	20	15	13	13
Appendicitis	45	33	44	36	38	34	31	27
Violence (except War Operations)	77	105	88	99	89	94	70	63
All Causes (except War Operations)	**1,083**	**977**	**863**	**901**	**793**	**754**	**665**	**611**
Operations of War	—	264	52	74	125	34	—	—

* Rates for 1936–39 are corrected to the 1940 classification.

At **ages 5-9** the rates for all causes, excluding operations of war, were decreasing rapidly between 1941 and 1945, reaching in the latter year levels 32 and 43 per cent. below those of 1936–39 for boys and girls respectively. In 1946 further sharp falls occurred, amounting to 26 and 23 per cent. of the 1945 rate for boys and girls, but in 1947 slight increases were registered. The causes contributing most to the improvement in 1946 were accidents and other violence, responsible for one-half of the fall amongst boys, and diphtheria for which the rate for children of both sexes was halved. Tuberculosis, rheumatism, appendicitis, pneumonia and non-tuberculous meningitis rates also decreased. The recession in 1947 was accounted for by an increase in deaths from violent causes, which more than counteracted further improvements for diphtheria (both sexes) and tuberculosis (girls). The largest increases in accidental deaths occurring in 1947 amongst boys were for drowning, motor accidents and burns. The rate of 381 per million for violent causes amongst boys in 1947 was rather higher than that in 1936–39, whilst the girls' rate of 162 was rather lower.

At **ages 10-14** the rates from all causes had fallen by 1945 to 20 and 30 per cent. below the levels of 1936–39 for boys and girls respectively. In 1946 a further improvement of 12 per cent. occurred in both rates, and this was followed in 1947 by another fall of eight per cent. Mortality of children of these ages from violent causes, which showed no improvement between 1942 and 1945, dropped by one-quarter for boys and by one-third for girls between 1945 and 1947, bringing the rate for girls below the level of 1936–39. Diphtheria, tuberculosis and rheumatism rates also decreased remarkably between 1945 and 1947, and every cause distinguished in the table registered some improvement.

Abridged life tables* based on the death rates of 1947 show that out of 10,000 of each sex born alive, 9,362 boys and 9,499 girls would be expected to survive to their fifteenth birthday, compared with 8,836 and 9,042 respectively according to the national life table for 1930–32, and 8,046 and 8,277 according to that for 1910–12. For girls the expectation of dying before 15 was 0·0958 in 1930–32 and 0·0750 in 1938. On the basis of this rate of fall during the seven years it was stated in the Review for 1938† that the probability of dying before 15 amongst girls might be expected to decline by one-thirtieth of its value annually. The statement was criticised by some as improbable, but had that anticipation been fulfilled during the nine years following 1938 the probability according to 1947 death rates should have been 0·0553, whereas it had actually declined even more rapidly, reaching 0·0501 in that year. In less than 20 years the proportion of female infants born who could not be expected to reach maturity has been halved, and this is by no means a negligible factor when the number of children required to replace the present generation by the next has to be considered.

Table XXXI shows the death rates at ages 5–14 without distinction of sex in each region and density aggregate in 1936–39 and each year 1944 to 1947, and expresses the rates of 1946 and 1947 as percentages of the mean annual rate during 1936–39 and in terms of the national rate of the same year taken as

Table XXXI.—Mortality per 100,000 Living at 5-14 years in Geographical Regions and different classes of Area, 1936-1939, and each year 1944 to 1947. Rates in 1946 and 1947 per cent. of those in 1936-1939 and of National Rate.

	Rates per 100,000 living (both sexes)					1946 Per cent. of		1947 Per cent. of	
	1936–39	1944	1945	1946	1947	1936–39	National Rate	1936–39	National Rate
England and Wales	**147**	**121**	**105**	**81**	**79**	**55**	**100**	**54**	**100**
Greater London ...	121	149	106	73	70	60	90	58	89
Remainder of South East	122	108	92	66	72	55	81	59	91
North I	193	139	120	102	103	53	126	53	130
North II	168	118	109	92	89	55	114	53	113
North III	154	120	103	76	80	49	94	52	101
North IV	181	124	115	94	84	52	116	46	106
Midland I	155	117	100	84	85	54	104	55	108
Midland II	142	104	107	79	78	56	98	55	99
East	117	101	90	74	64	63	91	55	81
South West	121	99	92	72	76	60	89	63	96
Wales I	154	129	127	100	91	65	123	59	115
Wales II	150	114	106	93	76	62	115	51	96
County Boroughs*	167	125	111	88	83	53	109	50	105
Other Urban Districts* ...	152	114	105	83	83	55	102	55	105
Rural Districts*	129	106	93	75	75	58	93	58	95

* Excluding Greater London.

* See Appendix "B" on page 312.

† Page 154, Statistical Review, 1938, Tables, Part II, Civil.

100. In 1946 the national rate fell to only 55 per cent. of the 1936–39 level, and in 1947 it again improved slightly. In the county boroughs mortality in 1947 was just half of the 1936–39 rate, whereas in rural districts it was 58 per cent. The urban excess, measured in this way, amounted in 1931–35 to 26 per cent. of the national rate, and in 1938 was still 27 per cent.; but it had contracted to 16 per cent. by 1946 and was only 10 per cent. in 1947. Amongst the regions, North I registered much the greatest excess, followed by Wales I, regional rates in 1947 ranging from 81 to 130 in terms of the national rate taken as 100. This dispersion shows no significant change since 1931–35.

Table XXXII.—Mortality from All Causes at Quinquennial Age groups after 15, 1936-39 and each Year 1940 to 1947 excluding deaths from operations of War in years 1940 to 1945 (Civilians only from September 3rd, 1939 for males and from June 1st, 1941 for females).

Age group (l.b.d.)	Death rate per 1,000 living								
	1936–39	1940	1941	1942	1943	1944	1945	1946	1947
Males									
15–	2·01	2·15	2·31	2·01	2·02	1·73	1·74	1·52	1·62
20–	2·77	4·18	4·83	4·65	4·95	4·56	4·68	2·66	2·05
25–	2·76	3·38	4·08	3·94	4·21	4·47	4·11	2·11	2·02
30–	3·01	3·39	3·76	3·58	3·79	3·76	3·56	2·35	2·22
35–	4·00	4·33	4·28	3·95	4·02	3·85	3·56	2·86	2·78
40–	5·57	6·00	5·59	5·14	5·28	5·03	4·64	4·25	4·12
45–	8·31	9·05	8·10	7·54	7·67	7·32	7·04	7·07	7·03
50–	13·06	14·47	12·57	11·36	12·06	11·30	11·16	11·08	11·31
55–	19·30	22·29	19·69	17·98	18·47	17·61	17·52	17·60	17·86
60–	29·76	33·37	29·53	27·13	27·52	27·61	27·53	27·71	28·59
65–	44·61	49·49	44·96	42·45	42·28	41·65	41·37	40·51	42·11
70–	72·24	76·84	68·34	63·32	64·04	62·19	62·50	62·12	66·54
75–	118·17	129·72	115·04	104·31	105·47	99·14	98·38	100·69	106·61
80–	178·78	201·09	178·65	158·45	162·25	155·36	155·83	155·17	169·80
85 and over ...	281·77	302·08	258·02	232·64	233·94	211·46	204·65	232·33	266·53
Females									
15–	1·75	1·85	1·85	1·67	1·63	1·39	1·33	1·17	1·21
20–	2·39	2·41	2·39	2·33	2·31	2·13	2·04	1·78	1·82
25–	2·52	2·41	2·46	2·39	2·31	2·17	2·04	1·93	1·90
30–	2·70	2·57	2·52	2·30	2·47	2·31	2·12	2·05	1·97
35–	3·30	3·20	2·90	2·76	2·83	2·52	2·51	2·41	2·35
40–	4·23	4·19	3·90	3·57	3·72	3·35	3·24	3·19	3·15
45–	5·99	6·09	5·66	5·29	5·27	4·86	4·77	4·84	4·64
50–	8·74	9·01	8·05	7·35	7·54	7·08	7·02	6·90	6·92
55–	12·61	13·27	11·83	11·05	11·02	10·26	10·29	10·31	10·26
60–	20·33	21·36	18·37	16·82	17·03	16·30	16·41	16·61	16·22
65–	32·15	34·61	30·56	27·76	28·22	26·70	26·49	26·38	26·43
70–	53·09	57·61	50·46	45·37	47·33	44·38	45·35	45·51	46·74
75–	88·51	97·01	84·34	76·01	78·92	73·22	74·48	76·25	79·47
80–	136·97	152·86	134·12	120·51	129·30	121·35	120·32	123·33	129·61
85 and over ...	248·56	265·94	240·93	208·91	213·34	188·34	189·48	206·15	219·79

Young Adults (Ages 15-24).—Table XXXII shows the death rates at ages 15–19 and 20–24 in 1936–39 and each year 1940 to 1947, deaths from operations of war and of non-civilians being excluded as indicated.

At **ages 15-19** male mortality was, as shown by the table on page 52, enhanced by civilian selection throughout the period 1944 to 1947 to the extent of probably about 15 per cent., but despite this the rate in 1946 was 24 per cent. below that in 1936–39 (Table XXXII). In the table below, the actual indices expressing the male death rates in each year 1944 to 1947 in terms of the mean annual rate of 1936–39 are stated as percentages of the "expected" indices

based on the assumptions about the effect of selection on the residual civilian population detailed on page 52, where those indices are tabulated for each age group from 15–19 to 45–49. The expected indices postulate no change in death rates in the total male population since 1936–39, so the resulting percentages show the improvement in civilian male death rates which can be attributed to factors other than selection due to movement of men in and out of the armed forces.

Age group (l.b.d.)	Male civilian mortality per cent. of that in 1936–39, allowing for effect of selection			
	1944	1945	1946	1947
15–	75	76	67	69
20–	77	79	63	61
25–	87	81	66	70
30–	87	83	73	73
35–	79	75	69	69
40–	83	77	75	73
45–49	85	83	84	84

For males aged 15–19 the net improvement over 1936–39 mortality amounted on that basis to 25 per cent. in 1944–45, 33 per cent. in 1946 and 31 per cent. in 1947. Table XXXII shows that the fall in death rate of females of the same age amounted to 33 per cent. in 1946 and 31 per cent. in 1947, which agree closely with the estimated figures for males. The improvement at this age period has been remarkable, though not quite so great as at 5–14.

At the next **age period, 20-24,** the effect of civilian selection on male death rates was very large in 1944–45 and was still important in 1947, as shown by the table of expected indices on page 52. After allowing for that, it appears from the table above that the improvement over 1936–39 mortality amounted to 37 per cent. in 1946 and 39 per cent. in 1947. Table XXXII shows that the corresponding fall for females was not so great, being 26 per cent. in 1946 and 24 per cent. in 1947. The reason for this was the failure of the tuberculosis death rate of young women of this age to improve substantially, the rates being 1·09 per thousand in 1936–39, 0·98 in 1946 and 1·00 in 1947. For all other causes the rates were 1·30, 0·80 and 0·82 respectively and these showed an improvement of 38 per cent. in 1946 and 37 per cent. in 1947, corresponding closely with that for males from all causes.

Adults aged 25-49.—At **ages 25-29** the inflation of the male civilian death rate by selection was almost as great as for the preceding age group in 1944–45, but demobilisation brought it down to about 15 per cent. in 1946 and five per cent. in 1947. Allowing for this, the improvement in male mortality compared with 1936–39 was 34 per cent. in 1946 and 30 per cent. in 1947, the corresponding fall amongst females being 23 and 25 per cent. The tuberculosis death rate of females improved very little during the period, being 0·93 per thousand in 1936–39, 0·85 in 1946 and 0·91 in 1947; but their death rate from all other causes fell from 1·59 to 1·08 and 0·99, or by 32 per cent. in 1946 and 38 per cent. in 1947. At **30-34** the corrected male mortality was 27 per cent. below that of 1936–39 in each year 1946 and 1947, and the female death rate showed a corresponding fall of 24 and 27 per cent. in the two years (tuberculosis falling

by 13 and 8 per cent.). At **35-39** the improvement for males was 31 per cent. in each year, and for females 27 per cent. in 1946 and 29 per cent. in 1947. At **40-44** it was about 26 per cent. for each sex in each year. At **45-49** male mortality was 16 per cent. below that of 1936–39 in each year, whilst females registered 19 per cent. fall by 1946 and 23 per cent. by 1947.

It is apparent that, apart from the unsatisfactory position for tuberculosis amongst young women between 20 and 30, young adults of each sex registered large and very similar decreases in death rates between 1936 and 1947. During the period from 1944 to 1947 there was a continuous fall in mortality for each age group between 25 and 50 amongst females, and for each age group between 30 and 45 amongst males ; and this was true also of the uncorrected rate for males aged 25–29, though the corrected rate showed some increase in 1947.

When comparison is made with mortality in the period 1921–30, the death rate in 1946–47 was less than a third for girls aged 5–9, about two-fifths for boys of 5–9 and girls of 10–14, about a half for children under 5 and females of 15–19, and about three-fifths for other adults under 45.

Adults aged 50 and over.—Table XXXII shows the trend of death rates (excluding those due to operations of war in 1940–45) at quinquennial age groups between 50 and 85, and at 85 and over. In the table below, the rates of 1942, 1945, 1946 and 1947 are expressed in terms of the mean annual rates in 1936–39 taken as 100.

Age group (l.b.d.)	Males				Females			
	1942	1945	1946	1947	1942	1945	1946	1947
50– ...	87	85	85	87	84	80	79	79
55– ...	93	91	91	93	88	82	82	81
60– ...	91	93	93	96	83	81	82	80
65– ...	95	93	91	94	86	82	82	82
70– ...	88	87	86	92	85	85	86	88
75– ...	88	83	85	90	86	84	86	90
80– ...	89	87	87	95	88	88	90	95
85 and over	83	73	82	95	84	76	83	88

A noteworthy feature of the trends in recent years is the contrast between the behaviour of the death rates of men and women between 50 and 70. Between 1936–39 and 1942 female death rates fell by 12 to 17 per cent., whereas male rates fell by 5 to 13 per cent. for the four age groups. Between 1942 and 1947 further improvements of about five per cent. occurred for women, but not for men. At 50–59 male rates ceased to fall at the end of the war, and at 60–64 the rate began to rise after 1942, increasing five per cent. by 1947. The percentage ratios of male to female death rates in 1936–39 at the four age groups were 149, 153, 146 and 139, but by 1947 they had risen to 163, 174, 176 and 159. These are large increases and the reasons for them need investigation.

Mortality at ages between 70 and 80 had fallen by about 15 per cent. for each sex by 1945, and slight increases occurred in 1946, followed by larger increases in 1947. At ages 80 and over the death rates rose considerably between 1945 and 1947, so that much of the improvement on 1936–39 rates noticed at the end of the war was lost.

Tables XXXIII and XXXIV compare the death rates from certain causes at four age periods 50–54, 55–64, 65–69, and 70 and over in 1936–38, 1943–45, 1946 and 1947. At **ages 50-54,** cancer accounted for 22 and 21 per cent. of the total male death rate in 1946 and 1947, compared with 16 per cent. in 1936–38. The coronary and myocardial disease groups accounted for 16½ per cent. in 1946 and 18 per cent. in 1947, compared with 12 per cent. in 1936–38. Tuberculosis contributed ten per cent. in each period. Pneumonia contributed only three or four per cent. of the mortality in 1946–47 compared with eight per cent. in 1936–38. The only cause group showing important increase since 1943–45 was coronary and myocardial disease with arterio-sclerosis, for which the death rate rose from 1·17 to 1·58 per 1,000 by 1947. For further analysis of this, see pages 199 to 205.

Amongst females cancer accounted for one-third of the total death rate in 1946 and 1947, and intra-cranial vascular lesions for 11 or 12 per cent. Causes contributing appreciably to the decrease in death rate between 1936–38 and 1947, included tuberculosis (0·11 per 1,000), cancer (0·15), diabetes (0·08), coronary and myocardial disease (0·16), influenza and pneumonia (0·35), and

Table XXXIII.—Death rates per 1,000 living at ages 50-54 and 55-64 from Various Causes in 1936-38, 1943-45, 1946 and 1947 (excluding non-civilians from 1943).

International List No.	Cause of Death	MALES				FEMALES			
		1936–38*	1943–45	1946	1947	1936–38*	1943–45	1946	1947
		Ages 50–54 (l.b.d.)							
13–22	Tuberculosis	1·32	1·28	1·16	1·15	0·40	0·30	0·28	0·29
45–55	Cancer	2·07	2·27	2·44	2·42	2·41	2·36	2·31	2·26
61	Diabetes	0·08	0·06	0·05	0·04	0·14	0·09	0·08	0·06
83	Intra-cranial vascular lesions	0·72	0·68	0·68	0·71	0·79	0·80	0·81	0·76
93 (*c*1), 94	Coronary and myocardial disease with arterio-sclerosis†	0·88	1·17	1·38	1·58	0·26	0·31	0·32	0·35
93 (*c*2 3), 93 (*d*), 162(*a*),(*c*)	Other myocardial degeneration and senility	0·74	0·52	0·45	0·47	0·56	0·36	0·35	0·31
33	Influenza	0·35	0·19	0·13	0·09	0·19	0·10	0·07	0·05
107–109	Pneumonia	1·07	0·56	0·41	0·45	0·41	0·22	0·20	0·20
115–129	Diseases of digestive system	5·00	0·76	0·68	0·63	3·33	0·34	0·31	0·27
130–139	Diseases of genito-urinary system		0·46	0·42	0·38		0·35	0·32	0·33
	All other diseases		2·87	2·66	2·73		1·77	1·60	1·78
163–195,198	Violence (except War Operations)	0·91	0·69	0·61	0·65	0·35	0·22	0·25	0·26
	All Causes (except War Operations)	**13·14**	**11·51**	**11·07**	**11·29**	**8·84**	**7·22**	**6·90**	**6·92**
197	Operations of War	0·01	0·21	0·01	0·02	—	0·13	—	—
		Ages 55–64 (l.b.d.)							
13–22	Tuberculosis	1·22	1·28	1·22	1·27	0·39	0·29	0·28	0·29
45–55	Cancer	4·60	4·69	4·76	4·93	3·92	3·80	3·78	3·71
61	Diabetes	0·20	0·12	0·12	0·09	0·34	0·22	0·21	0·20
83	Intra-cranial vascular lesions	2·07	2·01	2·01	2·00	1·97	1·94	1·96	1·94
93 (*c*1), 94	Coronary and myocardial disease with arterio-sclerosis†	2·18	2·88	3·38	3·67	0·85	1·02	1·18	1·24
93 (*c*2,3), 93 (*d*) 162(*a*),(*c*)	Other myocardial degeneration and senility	1·99	1·59	1·48	1·50	1·58	1·09	0·99	0·96
33	Influenza	0·53	0·33	0·27	0·18	0·36	0·17	0·17	0·08
107–109	Pneumonia	1·44	0·96	0·86	0·89	0·67	0·41	0·39	0·40
115–129	Diseases of digestive system	8·63	1·17	1·09	1·01	5·75	0·58	0·56	0·53
130–139	Diseases of genito-urinary system		1·07	1·00	0·93		0·57	0·53	0·52
	All other diseases		5·41	5·27	5·53		2·97	2·90	2·87
163–195,198	Violence (except War Operations)	1·21	0·88	0·84	0·83	0·46	0·32	0·35	0·36
	All Causes (except War Operations)	**24·07**	**22·39**	**22·29**	**22·83**	**16·29**	**13·38**	**13·30**	**13·08**
197	Operations of War	0·01	0·21	0·03	0·02	—	0·15	0·00	—

* Corrected to conform with 1940 classification.

† In the corresponding Tables XXXIII and XXXIV of the Review for 1940–45 (Text), the title of this group was "Coronary and arterio-sclerosis heart diseases," a description not wide enough to embrace all conditions included in 93(*c*1).

Table XXXIV.—Death rates per 1,000 living at ages 65-69, 70 and over from Various Causes in 1936-38, 1943-45, 1946 and 1947 (excluding non-civilians from 1943).

International List No.	Cause of Death	MALES				FEMALES			
		1936–38*	1943–45	1946	1947	1936–38*	1943–45	1946	1947
		Ages 65–69 (l.b.d.)							
13–22	Tuberculosis	0·87	0·96	0·98	0·99	0·35	0·28	0·28	0·27
45–55	Cancer	8·65	8·61	8·29	8·53	6·18	5·88	5·88	5·85
61	Diabetes	0·50	0·33	0·26	0·23	0·75	0·54	0·49	0·42
83	Intra-cranial vascular lesions	5·15	5·01	4·82	5·05	4·65	4·54	4·62	4·73
93 (*c*1), 94	Coronary and myocardial disease with arterio-sclerosis†	4·77	5·96	6·75	7·75	2·47	3·00	3·34	3·58
93 (*c*2, 3), 93 (*d*), 162(*a*), (*c*)	Other myocardial degeneration and senility	5·20	4·38	3·96	3·91	4·41	3·31	3·06	2·86
33	Influenza	0·73	0·48	0·38	0·22	0·64	0·38	0·30	0·16
107–109	Pneumonia	1·97	1·52	1·43	1·42	1·21	0·84	0·77	0·81
115–129	Diseases of digestive system	15·45	1·66	1·62	1·52	10·92	1·00	0·95	0·87
130–139	Diseases of genito-urinary system		2·57	2·23	2·09		1·06	0·94	0·91
	All other diseases		9·09	8·71	9·30		5·79	5·25	5·45
163–195,198	Violence (except War Operations)	1·38	1·19	1·07	1·08	0·74	0·50	0·50	0·53
	All Causes (except War Operations)	**44·67**	**41·76**	**40·50**	**42·09**	**32·32**	**27·12**	**26·38**	**26·43**
197	Operations of War	0·00	0·20	0·02	0·02	—	0·17	0·00	0·00
		Ages 70 and over (l.b.d.)							
13–22	Tuberculosis	0·48	0·48	0·49	0·50	0·27	0·21	0·18	0·20
45–55	Cancer	13·07	12·48	12·82	13·13	9·90	9·04	9·22	9·43
61	Diabetes	0·85	0·58	0·52	0·51	1·00	0·78	0·71	0·72
83	Intra-cranial vascular lesions	13·11	11·74	12·21	13·38	12·15	11·84	12·59	13·50
93 (*c*1), 94	Coronary and myocardial disease with arterio-sclerosis†	11·74	13·18	15·16	17·62	7·96	9·24	10·90	12·23
93 (*c*2, 3), 93 (*d*), 162(*a*), (*c*)	Other myocardial degeneration and senility	25·28	22·34	21·30	22·43	25·12	22·36	21·87	22·20
33	Influenza	1·50	1·15	0·79	0·59	1·56	1·19	0·92	0·53
107–109	Pneumonia	3·48	2·86	2·77	3·35	2·82	2·29	2·31	2·66
115–129	Diseases of digestive system	35·69	2·26	2·41	2·34	25·42	1·87	1·86	1·82
130–139	Diseases of genito-urinary system		6·80	6·65	6·72		2·02	2·06	2·10
	All other diseases		18·50	17·69	19·82		15·40	14·77	15·49
163–195,198	Violence (except War Operations)	2·53	1·96	1·97	2·05	2·30	1·77	1·85	1·88
	All Causes (except War Operations)	**107·73**	**94·33**	**94·80**	**102·43**	**88·50**	**78·01**	**79·25**	**82·76**
197	Operations of War	0·00	0·21	0·00	0·00	—	0·20	—	—

* Corrected to conform with 1940 classification.

† In the corresponding Tables XXXIII and XXXIV of the Review for 1940–45 (Text), the title of this group was "Coronary and arterio-sclerotic heart diseases," a description not wide enough to embrace all conditions included in 93 (*c*1).

violent causes (0·09), all other causes being responsible for a fall of 0·98 per thousand.

At **ages 55-64** cancer was responsible for 21 and 22 per cent. of the male death rate in 1946 and 1947, compared with 19 per cent. in 1936–38. The coronary and myocardial disease groups contributed 22 and 23 per cent. of the deaths in the two years compared with 17 per cent., whilst intra-cranial vascular lesions contributed nine per cent. and tuberculosis five per cent. in each period. Coronary and myocardial disease with arterio-sclerosis registered a rise in death rate from 2·88 to 3·67 per million between 1943–45 and 1947 (*see* page 64) but all the other cause groups except cancer showed decreases.

Amongst females, whose total death rate declined by one-fifth in the ten years, cancer accounted for 28 per cent. of the rate in 1946–47, and cerebral vascular lesions for 15 per cent. Causes contributing appreciably to the fall in death rate between 1936–38 and 1947 included tuberculosis (0·10 per 1,000), cancer (0·21), diabetes (0·14), coronary and myocardial disease (0·23), influenza and pneumonia (0·55), and violent causes (0·10), all other causes being responsible for a fall of 1·88 per thousand. Between 1943–45 and 1947, when the death rate

from all causes improved by two per cent., a small increase occurred for coronary and myocardial disease with arterio-sclerosis, but it was offset by a corresponding fall in the rate for other myocardial degeneration, which was not the case amongst men.

At **ages 65-69** cancer accounted for 20 per cent. of the male death rate in 1946–47, compared with 19 per cent. in 1936–38; and intra-cranial vascular lesions contributed 12 per cent. in each period. Coronary and myocardial disease with arterio-sclerosis registered a considerable increase, amounting to 62 per cent. in the ten years, whereas the rate for myocardial degeneration and senility without mention of arterio-sclerosis registered a decrease of 25 per cent. The combined rate increased from 9·97 to 11·66, whereas for all other causes it fell from 34·70 to 30·45, each group in the table except tuberculosis contributing to the fall. Little change in the total rate occurred between 1943–45 and 1947, increases for the coronary group and tuberculosis being offset by decreases for the other causes.

Considerable improvement occurred in the total death rate of females between 1936–38 and 1943–45. Coronary and myocardial disease with arterio-sclerosis registered an increase from 2·5 to 3·0, and this continued in 1947, when the rate was 3·6 per 1,000 ; but a compensating fall occurred for other myocardial degeneration, the combined rate declining from 6·88 to 6·44 in the ten years. For all other causes the death rate fell from 25·44 to 19·99, each group in the table except intra-cranial vascular lesions contributing to this. Cancer accounted for 22 per cent. of deaths of females at this age in 1947, compared with 19 per cent. in 1936–38.

At **ages 70 and over,** the downward trend of the death rates which was so noticeable between 1936–38 and 1943–45 was halted in 1946, and considerable increases occurred in 1947. The causes in Table XXXIV which contributed substantially to the increases were, for each sex, intra-cranial vascular lesions, coronary and myocardial disease, pneumonia and violent causes ; cancer rates also increased slightly. In 1947 the proportions attributed to cancer out of all deaths at ages over 70 were 12·8 and 11·4 per cent. for males and females, compared with 12·1 and 11·2 in 1936–38. For intra-cranial vascular lesions the percentage contributions increased from 12·2 and 13·7 in 1936–38 to 13·1 and 16·3 in 1947.

Table XXXV.—Age at Death of Centenarians, 1946 and 1947.

	Males								Females									
	100 and over	100	101	102	103	104	105	106	100 and over	100	101	102	103	104	105	106	107	108
1946																		
Greater London ...	4	2	1	1	–	–	–	–	16	6	6	1	2	–	–	–	–	1
Rest of South East ...	3	–	2	–	–	–	1	–	27	13	8	3	–	–	1	1	1	–
North...	3	–	2	1	–	–	–	–	12	6	3	2	1	–	–	–	–	–
Midlands	4	2	–	–	2	–	–	–	14	6	2	3	3	–	–	–	–	–
East	1	–	1	–	–	–	–	–	13	5	2	3	2	–	1	–	–	–
South West	3	1	–	–	–	2	–	–	8	5	–	–	2	1	–	–	–	–
Wales...	4	2	1	1	–	–	–	–	4	2	2	–	–	–	–	–	–	–
England and Wales ...	**22**	**7**	**7**	**3**	**2**	**2**	**1**	–	**94**	**43**	**23**	**12**	**10**	**1**	**2**	**1**	**1**	**1**
1947																		
Greater London ...	3	–	–	2	–	–	1	–	16	8	3	4	1	–	–	–	–	–
Rest of South East ...	4	4	–	–	–	–	–	–	32	16	5	5	3	2	–	–	–	1
North...	5	2	1	1	1	–	–	–	12	5	2	1	3	1	–	–	–	–
Midlands	1	–	–	1	–	–	–	–	17	9	6	1	1	–	–	–	–	–
East	2	–	1	–	–	–	–	1	8	2	–	4	1	1	–	–	–	–
South West	1	1	–	–	–	–	–	–	9	2	5	1	1	–	–	–	–	–
Wales...	3	1	1	1	–	–	–	–	3	2	1	–	–	–	–	–	–	–
England and Wales ...	**19**	**8**	**3**	**5**	**1**	–	**1**	**1**	**97**	**44**	**22**	**16**	**10**	**4**	–	–	–	**1**

Deaths of Centenarians.—Table XXXV presents the usual record of the deaths of reputed centenarians. There were 116 in each year 1946 and 1947, compared with mean annual numbers of 105 in the six years 1940–45 and 102 in the five years 1935–39.

Mortality from All Causes according to Marital Condition.—In the Review for 1933, Table XXXII, mean annual death rates of females in the period 1930–32 were given for single, married, widowed and divorced women in quinquennial age groups. In Table 19 of the Reviews for 1946 and 1947 deaths of civilians of each sex are given for those years according to marital condition and age. Estimated populations including the armed forces have been calculated for these groups in 1946 and 1947, and for males over 45 and females of each age group they have been used as denominators of the death rates in Table XXXVI, since they approximate to the civilian populations.

Table XXXVI.—Death rates from All Causes of Single, Married and Widowed Males over 45 years of age and Females over 20, per 1,000 living at quinquennial groups of ages, 1930-32, 1946 and 1947.

Sex and age	1930–32			1946			1947		
	Single	Married	Widowed and divorced	Single	Married	Widowed and divorced	Single	Married	Widowed and divorced
Males									
45–				11·3	6·4	10·1	11·9	6·4	8·4
50–				14·4	10·4	16·2	16·6	10·5	15·7
55–				21·6	16·7	23·3	22·0	17·0	23·5
60–				34·0	26·1	34·5	36·0	26·8	35·6
65–				47·5	37·9	48·5	51·0	39·3	50·1
70–				68·4	57·6	71·9	75·9	60·3	80·7
75 and over ...				109·0	111·1	156·1	121·9	118·8	170·0
Females									
20–	2·7	3·0	4·3	1·86	1·48	—	1·93	1·59	—
25–	3·2	3·0	4·1	2·36	1·70	2·92	2·44	1·66	4·05
30–	3·6	3·2	4·6	2·77	1·84	3·51	2·89	1·74	2·98
35–	4·1	3·9	4·7	2·98	2·27	2·80	3·18	2·16	2·89
40–	5·5	4·7	5·5	3·80	3·02	3·81	4·00	2·92	3·91
45–	7·5	6·4	8·0	5·21	4·61	6·41	5·44	4·34	5·99
50–	9·9	9·1	11·0	7·65	6·60	7·69	8·05	6·61	7·27
55–	14·3	13·4	15·3	10·97	9·82	11·52	11·66	9·75	10·94
60–	20·4	20·7	23·4	16·7	15·8	18·2	17·2	15·2	17·9
65–	31·0	32·5	36·5	26·2	26·0	26·9	26·9	26·3	26·4
70–	50·7	52·4	59·2	41·8	43·8	48·2	46·4	43·5	49·5
75 and over ...	122·8	99·2	137·5	107·6	78·4	119·5	117·7	84·4	123·1

Amongst males between 45 and 75 the death rates of the married were much below those of the single and widowed groups, and the degree of excess in the latter groups at each age is indicated below by expressing the rates in 1946 and 1947 in terms of the mortality of married males of the same ages taken as 100.

		45–	50–	55–	60–	65–	70–	75 and over
Single men	1946	177	138	129	130	125	119	98
	1947	186	158	129	134	130	126	103
Widowed and divorced men ...	1946	158	156	140	132	128	125	141
	1947	131	150	138	133	127	134	143

Single men at ages 45–49 suffered a mortality about 80 per cent. greater than married men, and considerably greater also than widowers. The excess

diminished with advancing age, amounting to about 30 per cent. between 55 and 70, and disappearing after 75. In the absence of death rates for separate causes it is not possible to determine to what extent the excess was due to marital selection and to what extent it arose from different environmental circumstances. The similarity between the death rates of single and widowed men after 50, and their common excess over those of married men, suggest that by that age the effects of selection were of slight importance and the married state was favourable to a substantially lower mortality amongst men.

For women the range of ages over which reliable comparison can be made is greater, and it is possible also to contrast the position in 1946–47 with that in 1930–32. Death rates of single women, and of widowed and divorced women, are expressed below in terms of the corresponding rates for married women taken as 100 in each period.

Age group (l.b.d.)	Single women			Widowed and divorced women		
	1930–32	1946	1947	1930–32	1946	1947
20–	90	126	121	143	—	—
25–	107	139	147	137	172	244
30–	113	151	166	144	191	171
35–	105	131	147	121	123	134
40–	117	126	137	117	126	134
45–	117	113	125	125	139	138
50–	109	116	122	121	117	110
55–	107	112	120	114	117	112
60–	99	106	113	113	115	118
65–	95	101	102	112	103	100
70–	97	95	107	113	110	114
75 and over ...	(124)	(137)	(139)	(139)	(152)	(146)

In 1930–32 single women registered lower death rates than married women at ages 20–24 and 60–74, but in 1946 and 1947 their rates exceeded those of married women at every age group under 70. In 1946 the relative excess of single over married women's mortality was much greater than in 1930–32 at ages between 25 and 45, and was slightly greater between 50 and 60. In 1947 the excess increased again for every age group between 25 and 70, and a deficiency gave place to an excess at 70–74. At 30–34 it amounted to 66 per cent. and at ages just above and below it was 47 per cent. The large excess both for single and widowed at ages over 75 in all three periods can be accounted for by the fact that married women of these ages have a lower average age than either single or widowed, since they pass out of the married group on decease of the husband.

One reason for the increased excess of single women's death rates at ages under 45 was the great fall in maternal mortality since 1930–32. Deducting the deaths due to pregnancy and childbearing, including abortion, from both single and married groups, and expressing the death rates from all other causes of single women in terms of those for married women taken as 100, the indices become :—

Year	20–	25–	30–	35–	40–	45–49
1930–32* ...	121	132	134	120	123	119
1946	141	153	169	142	129	114
1947	142	161	185	158	141	126

* The rates per million are given in Table XXXIV of the Review for 1933, Text.

This reduces the discrepancy between 1946–47 and 1930–32 considerably at ages under 35, but the excess is of course enhanced throughout by excluding maternal deaths.

An excess of similar amount is seen when the total death rates of widowed and divorced women are compared with those of married women of the same ages, and at ages under 50 this excess also increased in amount between 1930–32 and 1946–47. It was very large at ages between 25 and 35. At ages 50–64 it remained at about 15 per cent., as in 1930–32; and at 65–69 it became negligible. After 65 the excess again appeared, probably because of the higher average age of the widowed than of the married within each age group, which would have an appreciable effect on the comparison, though this would not be important at younger ages.

By far the most important cause of death of young women is tuberculosis, and it is also a cause of marital selection. Since death rates from other causes have been falling more rapidly than tuberculosis rates, the relative contributions of tuberculosis to the total deaths of young women have increased to very high proportions at ages between 15 and 30, and this may have affected the ratio of single to married death rates from all causes.

The table below gives the deaths of women from tuberculosis in the two years 1946–47 according to marital condition at successive ages, and the mean annual death rates from tuberculosis and from all other causes.

Age group (l.b.d.)	Deaths in 1946–47 from Tuberculosis			Mean annual death rate per million					
				Tuberculosis			Other causes		
	Single	Married	Widowed(1)	Single	Married	Widowed(1)	Single	Married	Widowed(1)
15–	885	21	—	315	188	—	863	938	—
20–	954(2)	557	19	537	396	1,462	1,354	1,134	2,769
25–	529	921	59	614	389	1,255	1,788	1,294	2,191
30–	271	751	49	456	277	636	2,374	1,513	2,597
35–	187	663	39	292	209	336	3,192	2,368	3,103
40–	150	468	46						
45–	184	577	131	191	131	234	6,282	5,329	6,757
55–	145	360	209	194	119	191	13,802	12,180	14,917
65–	82	169(2)	204	151	114	140	34,260	32,655	37,184
75 and over ...	17	27	89	61	78	83	112,665	81,319	121,235
Total 15 and over	3,404(2)	4,514(2)	845						

(1) Includes also divorced women. (2) Includes 1 of unstated civil state.

The ratios of single and of widowed to married women's rates, at the same ages taken as 100, show great contrast :—

	15–	20–	25–	30–	35–	45–	55–	65–	75 and over
Tuberculosis									
Single ...	168	136	158	165	140	146	163	132	78
Widowed	—	369	323	230	161	179	161	123	106
Other causes									
Single ...	92	119	138	157	135	118	113	105	139
Widowed	—	244	169	172	131	127	122	114	149
All causes									
Single ...	105	124	143	158	135	119	114	105	138

The excess of single over married women's mortality is relatively greater for tuberculosis than for other causes of death combined, at each age period up to 75. Nevertheless, the relative excess for other causes still remains very large at ages between 25 and 45, and exceeds that for all causes in 1930–32 (shown in the table on page 68). At ages after 45 exclusion of tuberculosis from the rates makes little difference to the relative excess. There are many other diseases, however, which lead to marital selection, and the fall in the proportions of young women remaining unmarried in recent years may well have accentuated the effects of such selection on the death rates of the single, just as it accentuated the mortality of young civilian males as the proportion left in civil life diminished.

The excess of widows' over married women's mortality was likewise relatively greater for tuberculosis than for other causes at each age period up to 75, and particularly at ages between 20 and 35, but the reasons for this can hardly have been selective, and were probably largely economic.

CAUSES OF DEATH

The causes of death at 19 groups of ages of males and females, with exclusion of those of non-civilians, are shown in Table 21 for each year 1946 and 1947. Table 21A gives the deaths of non-civilians which were registered in England and Wales with similar detail of cause and age. Table 22 gives the deaths of children subdivided by age into four parts of the first year and each year up to five, from each significant cause. Table 23 classifies deaths of civilians of each sex at all ages from the principal causes, according to the month when their death occurred, this being the only table based upon the date of occurrence instead of the date of registration ; the annual totals in this table are not, therefore, the same as in Tables 6 and 21.

The classification by cause in Table 21 includes the full International List of Causes of Death (Fifth Revision, 1938). Certain numbered items in it are subdivided, letters indicating subdivisions in international use and numbers (1), (2), etc., indicating subdivisions made without international agreement. This list is used also in Table 6, and selected causes from it in Tables 7–12, 13A, 15, 22, 23 and 25. The number in italics which follows each list number in Table 6 denotes the group of the Intermediate List of Causes of Death in which the number is included but that condensation of the complete list is not used in any of the tables.

In Table 24 the causes of death are arranged according to the " short list " adopted by the Registrar General in consultation with the Ministry of Health for use in 1940–49, and the relation of this list to the detailed International List is shown at the head of the table. The Registrar General's " Manual of the International List of Causes of Death (1938 Revision) "*, which defines the contents of every heading in the detailed, intermediate and short lists, should be consulted when it is desired to ascertain the precise content of any heading in these lists.

The method of classification when more than one cause is entered on a death certificate is explained on pages xxxvi–xli of the Manual, and the effects upon death rates of the introduction of this method in 1940 have been discussed in the Reviews for 1938–39 and 1940–45†. In Tables 6–9, 11 and 12, all deaths and rates for years 1931 to 1939 have been modified or adjusted for the change and may be regarded as comparable with those for years 1940

* Copies may be obtained from H.M. Stationery Office. Price 3s. 6d. net.
† 1938-39 Text, pages 47-49, and 1940-45 Text, pages 77–79.

onwards. For years prior to 1931 the conversion ratios for separate causes given in Appendix B1 of the 1940 Review can be applied to obtain approximate comparison. When death rates at separate age groups in years before 1940 are required for comparison with those of recent years, for most causes the original rates can be multiplied by the ratio of the corrected deaths at all ages for the sex in question (shown in Table 6 of 1940 Review for years 1931–39 or obtained by applying the conversion ratio for years before 1931) to the corresponding original uncorrected figure at all ages. For a few causes such as diabetes, however, the conversion ratio was found to change progressively with age, and in such cases the appropriate conversion ratios have been applied at each age group and adjustments made to give the correct total at all ages. (See for example the death rates from diabetes in 1931 to 1937 in Table XCIX.)

Special secondary tabulations according to the associated cause are made for deaths connected with anæsthetics, alcoholism and childbearing, and are included in this Review.

Table 7 gives the crude death rates per million males, females and persons living, derived from the deaths in Table 6. No rates are shown for those non-violent causes which generally give a rate of less than five per million population.

Table 8 gives the Comparative Mortality Indices * for the principal causes by sex; and Table 9 gives C.M.I's.* for persons, and death rates at ages under 15, for certain causes in each year as far back as the information is available.

Table 10 gives the crude death rates in 1945, 1946 and 1947 from several epidemic diseases, mortality from enteritis and diarrhœa under two years of age and maternal mortality, in each metropolitan and county borough and each administrative county.

Tables 11 and 12 show numbers of deaths under one year of age, and rates per 1,000 related live births, for the causes of chief importance at that age during each year from 1937 to 1947.

Table 13A analyses infant mortality from certain causes of death by sex and considerable detail of age. Table 15 gives rates per 1,000 related births for five subdivisions of the first year of age of each principal cause in each geographical region; and Appendix 15 gives the same information for the "standard" regions.

In Table 24 deaths in 1946 and 1947 are shown for the several geographical regions of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age and the short list of causes. Appendix 24 gives the same information for the "standard" regions. In Table 24A (and Appendix 24A) deaths from a supplementary list of causes are given without distinction of age in the same regional divisions. The information in Table 24, though not by age, is also available for each individual administrative area of England and Wales.

Appendix A of the Review for 1947 shows comparable death rates in each year 1943 to 1947 for England and Wales and for Scotland from ten important causes, standardised upon the sex and age distribution of the population of Great Britain in the same year.

Statistics of Notifiable Infectious Diseases

Tables 26, 28 and 29 give the record of annual notifications of infectious diseases other than tuberculosis, and Table 27 shows the seasonal incidence. The statistics of original notifications in Table 27 are derived from weekly

* See note on page 8 about the recalculation of these rates in 1947 Review.

cards, sent by each Medical Officer of Health to the Registrar General, on which are stated the numbers of notifications received during the week of each disease notifiable throughout the country. No returns are made for diseases which are notifiable only within restricted areas. Since 1944 a quarterly return has also been sent by each Medical Officer of Health stating the number of original notifications received during the three calendar months, and also the numbers of persons of each sex and in specified age groups who, after amendment of diagnosis, either by the notifier or by the infectious diseases hospital, remained as notified cases. The information provided by the quarterly returns provides the basis for Table 28A which for years 1946 and 1947 not only repeats the analysis of the final notifications by sex and age in England and Wales as in 1944 and 1945, but extends the same analysis to each separate region and density aggregate. The statistics for years 1944–47 in Tables 26 and 28 and those for separate areas in Table 29 * are the final numbers after correction of diagnosis.

The ratio of the final number after correction to the original number of notifications varies greatly according to the extent to which provisional notification is being practised as a safeguard, and from 1944 onwards the trend of prevalence of a disease can be best assessed from the corrected numbers. In Table XXXVII comparison is made between the regional ratios of corrected to original notifications in 1944–45, 1946 and 1947 for the six diseases which are appreciably affected by such correction.

Table XXXVII.—Ratios of Final to Original Notifications of six Infectious Diseases in Regions and Density Aggregates, 1944-45, 1946 and 1947.

		Greater London	Rest of South East	North	Midland	East	South West	Wales	County* Boroughs	Other Urban* Districts	Rural* Districts	England and Wales
Typhoid fever ...	1944–45	0·66	0·92	0·74	0·72	0·89	0·82	0·83	0·70	0·84	0·83	0·77
	1946	0·70	0·82	0·75	0·76	0·89	0·92	0·91	0·70	0·86	0·92	0·81
	1947	0·67	0·88	0·67	0·68	0·97	0·50	0·87	0·62	0·84	0·86	0·74
Paratyphoid fever ...	1944–45	0·76	0·96	0·81	0·69	0·87	1·00	0·96	0·77	0·88	0·89	0·84
	1946	0·77	0·96	0·93	0·85	1·00	0·77	1·03	0·94	0·93	0·88	0·91
	1947	0·79	0·97	0·81	0·75	0·98	0·82	0·90	0·79	0·92	0·93	0·87
Cerebro-spinal fever ...	1944–45	0·79	0·93	0·74	0·59	0·88	0·84	0·78	0·63	0·83	0·84	0·74
	1946	0·75	0·89	0·75	0·62	0·90	0·81	0·77	0·67	0·81	0·81	0·74
	1947	0·71	0·85	0·73	0·61	0·88	0·85	0·74	0·66	0·80	0·78	0·72
Diphtheria ...	1944–45	0·64	0·87	0·76	0·73	0·80	0·81	0·76	0·70	0·83	0·87	0·75
	1946	0·58	0·86	0·64	0·62	0·78	0·71	0·73	0·57	0·77	0·78	0·65
	1947	0·46	0·78	0·51	0·53	0·80	0·62	0·59	0·45	0·67	0·68	0·53
Dysentery ...	1944–45	0·94	1·00	0·96	0·95	0·99	0·99	0·99	0·95	1·00	0·99	0·97
	1946	0·89	0·97	0·94	0·96	0·94	0·97	0·94	0·90	0·98	0·98	0·94
	1947	0·84	0·96	0·89	0·90	0·99	0·99	0·87	0·82	0·97	0·98	0·91
Acute Poliomyelitis and Polioencephalitis ...	1944–45	0·85	0·96	0·88	0·95	1·04	0·98	0·94	0·87	0·98	0·97	0·93
	1946	0·87	0·95	0·92	0·86	0·88	0·97	0·80	0·86	0·93	0·95	0·90
	1947	0·76	0·92	0·84	0·82	0·88	0·90	0·84	0·78	0·90	0·91	0·83

* Excluding Greater London.

* The original notifications for each region, shown at the commencement of Table 29, are derived from the four quarterly returns. When making comparisons between "original" notification figures of years 1944–47 for certain diseases and the published figures for years prior to 1944 (which included partial corrections) the latter figures should be multiplied by the following factors, as pointed out in the Review for 1940–45, Text, page 85 :—cerebro-spinal fever 1·045, diphtheria 1·044, poliomyelitis and polioencephalitis 1·035, measles 0·988, dysentery 0·958.

For all the diseases in the table the county boroughs showed a higher proportion of corrected diagnoses than smaller towns or rural districts; and Greater London in 1946–47 showed the highest proportion amongst the regions for each disease except cerebro-spinal fever, for which the Midland region showed a consistently high rate of correction. In England and Wales as a whole the proportion corrected increased in 1946, and again in 1947, for diphtheria, dysentery and poliomyelitis.

Tables 9 and 10 give particular attention to mortality from the principal infectious diseases, Table 9 giving comparative mortality indices at all ages or death rates at ages under 15 for years as far back as the records allow, whilst Table 10 shows the death rates in the current and preceding years in each metropolitan and county borough and each administrative county. The numbers of deaths producing these rates are in Tables 21 and 24.

VITAL STATISTICS OF CERTAIN DISEASES AND OTHER CAUSES OF DEATH

1, 2. Typhoid and Paratyphoid Fevers.–The number of deaths registered and of cases notified in England and Wales from these causes are shown below for each year 1944 to 1947, distinguishing civilians and non-civilians.

	Typhoid fever						Paratyphoid fever					
	Deaths				Final Notifications*		Deaths				Final Notifications*	
	Civilians		Non-civilians		Civilians	Non-civilians	Civilians		Non-civilians		Civilians	Non-civilians
	M.	F.	M.	F.			M.	F.	M.	F.		
1944 ...	23	19	2	—	259	16	3	6	1	—	225	33
1945 ...	12	17	3	—	261	26	3	12	—	—	213	18
1946 ...	13	22	3	—	459	20	9	7	—	—	720	10
1947 ...	17	8	4	—	264	11	2	2	1	—	396	16

* Excluding Port Health Districts.

Deaths from typhoid fever averaged 148 annually during 1935–39, 61 annually during 1940–45 with a progressive decline during these six years, and numbered 38 in 1946 and 29 in 1947. For paratyphoid the annual average was 31 in 1935–39, 30 in 1940–45, 16 in 1946 and 5 in 1947. The comparative mortality index for typhoid and paratyphoid combined, which relates the death rate at each period to that of 1938 and makes allowances for changes in the age structure of the population, was 97·7 in 1871–75, 29·7 in 1901–05, 6·020 in 1916–20, 0·534 in 1941–45, 0·318 in 1946 and 0·180 in 1947. The risk of dying from these causes at the beginning of the century was 165 times greater than in 1947.

The notifications of typhoid and paratyphoid in the table above are corrected for amendments of diagnosis after admission to hospital. Original notifications in 1946 numbered 596 for typhoid and 805 for paratyphoid compared with corrected totals of 479 and 730. In 1947 original notifications numbered 385 and 477 compared with corrected totals of 275 and 412.

Table XXXVIII shows annual notification rates in regions and density aggregates and deaths per thousand cases notified in the density aggregates from 194. to 1947, all rates being based on final notifications after correction. Comparability between the various areas suffers because of possible variations in the completeness of notification. The extent to which notifications are defective is not known, but there can be little doubt that a number of cases, especially of paratyphoid, fail to be recognized and notified.

Table XXXVIII.—Typhoid and Paratyphoid Fevers : Prevalence and Fatality in Regions. 1944 to 1947 (Civilians).

Area	Typhoid fever				Paratyphoid fever			
	1944	1945	1946	1947	1944	1945	1946	1947
	Notified cases† per million living				Notified cases† per million living			
England and Wales	**7**	**7**	**11**	**6**	**6**	**6**	**18**	**9**
Regional Summary :								
South East	6	7	7	7	6	5	10	13
Greater London	6	5	7	6	6	3	7	6
Remainder	6	10	7	7	5	7	15	22
North	7	7	8	6	4	6	31	8
North I	8	9	5	5	5	7	13	16
North II	3	—	4	5	5	3	10	5
North III	7	4	7	7	3	3	91	11
North IV	7	10	10	6	5	9	9	5
Midland	6	6	8	5	4	4	10	5
Midland I	7	6	9	4	4	4	14	5
Midland II	4	7	7	7	4	3	2	5
East	8	6	4	17	7	7	4	22
South West	14	5	6	1	19	6	11	4
Wales	6	8	73	5	9	10	29	4
Wales I	7	7	18	5	3	8	37	2
Wales II	4	10	211	6	23	14	9	8
Density Summary :								
County Boroughs*	5	7	7	6	4	6	28	7
Other Urban Districts* ...	6	6	16	6	8	6	18	11
Rural Districts*	11	11	15	8	6	6	10	14
	Deaths per thousand cases notified†				Deaths per thousand cases notified†			
England and Wales	**157**	**107**	**76**	**95**	**40**	**70**	**22**	**10**
Greater London	143	61	105	135	26	91	36	—
County Boroughs*	213	171	76	96	49	44	11	—
Other Urban Districts* ...	147	129	80	118	20	51	33	14
Rural Districts*	148	61	55	32	83	133	26	18

* Excluding Greater London. † Fully corrected for diagnosis revision.

The notification rate of typhoid for England and Wales rose from 7 per million in 1944 and 1945 to 11 per million in 1946, the increase resulting from an outbreak during August 1946 in Wales II. In this region 148 cases were reported in 1946 compared with 7 in 1945 and 4 in 1947. There was increased prevalence in 1946 also in Wales I where 12 cases were reported in 1945, 31 in 1946 and 9 in 1947.

The fatality rate of typhoid as estimated by deaths per thousand notifications was, for England and Wales, 157 in 1944, 107 in 1945, 76 in 1946 and 95 in 1947. The rates in 1946 and 1947 were lowest in rural districts and highest in Greater London.

For paratyphoid fever the notification rate for England and Wales rose from 6 per million in 1944 and 1945 to 18 per million in 1946. There was a greatly increased incidence in the West Riding of Yorkshire (91 per million) but several other areas, notably South Wales, also registered some increase in 1946 compared with the two previous years. In 1947 the notification rate for England and Wales fell to 9 per million, but there were epidemic outbreaks in the South East and in the East Regions.

The fatality rate of paratyphoid fever in England and Wales was 40 per thousand notified cases in 1944, 70 in 1945, 22 in 1946 and 10 in 1947. During 1947 there were no deaths from paratyphoid in Greater London nor in the county boroughs.

Table XXXIX gives corrected notification rates by sex and age and fatality rates by age without distinction of sex for each year 1944 to 1947. For both diseases the increased prevalence in 1946 occurred chiefly amongst children, while there was little increase among persons over 45. Whereas the notification rates, especially for paratyphoid, tended to decline with advancing age, the fatality rates showed the reverse trend.

Table XXXIX.—Typhoid and Paratyphoid Fevers. Corrected Notification and Fatality Rates by Sex and Age (Civilians). 1944 to 1947.

	Typhoid fever				Paratyphoid fever			
	0–	15–	45 and over	All ages	0–	15–	45 and over	All ages
	Notifications (corrected) per million living							
Males								
1944	9	9	5	8	9	5	3	5
1945	9	7	4	7	8	5	2	5
1946	19	10	4	10	45	11	5	17
1947	8	9	3	7	18	9	3	9
Females								
1944	6	8	4	6	9	8	4	6
1945	6	7	7	7	10	5	5	6
1946	16	13	9	12	48	15	7	19
1947	6	7	5	6	16	10	6	10
	Deaths per 1,000 notifications (corrected)							
Persons								
1944	59	163	265	162	13	29	114	40
1945	29	100	195	111	—	96	135	70
1946	19	69	175	76	5	13	128	22
1947	30	92	175	95	—	—	60	10

6. Cerebro-spinal (Meningococcal) Meningitis.—Deaths from this cause in the years 1944 to 1947, including those of non-civilians registered in England and Wales, numbered 592, 555, 509 and 534. The series of annual C.M.I's. in Table XL shows that the male death rates in 1946 and 1947, after allowing for the changing age structure of the population, were about two-thirds of that in 1938, while the female rate in 1947 was about three-quarters of that in 1938. For both sexes at age groups under 25 and for males at 25–64 the rates in 1947 were well below those in 1945.

Table XL.—Cerebro-spinal Fever : Mortality at Various Ages per Million Living.† 1911-1947.

(*ages l.b.d.*)

Year	Males					Females				
	C.M.I.	0–	5–	15–	25–64*	C.M.I.	0–	5–	15–	25–64*
1911–14	0·448	64·6	11·9	5·8	1·8	0·513	55·0	8·9	4·1	1·6
1915–17	1·613	149·8	45·7	136·2	13·2	1·827	123·0	36·5	24·8	10·7
1918–20	0·857	90·0	23·8	44·2	5·7	0·910	68·7	18·9	12·1	3·8
1921–25	0·442	60·0	11·2	7·4	2·1	0·498	48·4	9·1	5·5	1·6
1926–30	0·705	98·0	15·9	11·9	3·5	0·720	72·7	12·4	6·1	2·4
1931	2·184	220·2	51·6	54·5	16·5	2·094	172·6	45·8	17·4	9·8
1932	1·830	211·0	36·3	42·9	12·8	1·818	153·0	31·5	16·3	9·3
1933	1·370	174·1	26·9	28·7	8·3	1·535	139·5	27·6	12·9	6·6
1934	1·138	136·2	24·0	22·2	8·0	1·123	107·3	17·9	7·7	5·4
1935	0·912	119·6	18·6	14·3	6·5	1·022	104·6	16·0	8·6	3·8
1936	0·981	135·6	17·2	17·7	6·6	0·990	106·2	16·5	7·2	3·2
1937	1·024	142·9	15·6	21·8	6·5	1·159	132·2	11·9	9·3	4·8
1938	1·000	127·7	15·6	18·5	8·9	1·000	104·3	17·6	6·9	3·5
1939	0·742	93·8	11·2	16·5	6·0	0·805	77·0	11·0	5·8	4·5
1940	3·762	385·3	67·4	77·4	41·6	4·076	297·5	55·8	42·7	27·6
1941	3·280	325·7	58·7	53·4	36·7	3·609	248·4	49·0	30·1	27·4
1942	1·788	195·9	34·6	28·0	17·7	2·000	165·0	26·4	15·1	12·8
1943	1·236	150·9	18·1	24·9	11·3	1·171	99·3	20·0	10·7	6·5
1944	0·904	126·5	12·6	12·6	8·5	0·879	80·6	11·5	6·3	5·4
1945	0·838	113·8	10·2	15·5	7·2	0·786	81·2	9·7	5·4	3·9
1946	0·644	93·4	11·4	9·2	4·9	0·805	76·6	9·5	5·3	4·7
1947	0·648	103·5	9·5	8·7	4·0	0·766	78·1	8·4	4·1	4·6

* Equivalent average rate.
† Corrected to 1940 classification in years 1911–1939.
Civilian mortality only 1915–1920, and from 3rd September, 1939, for males and from 1st June, 1941, for females.

Table XLI.—Cerebro-spinal Fever : Notification and Fatality Rates in 1931 to 1947, with distinction of Non-civilians from 1939.

Year	Notifications per million living	Deaths* per 1,000 notifications	Year	No. of notifications		Rate per million civilians	Deaths per 1,000 notifications	
				Civilians	Non-civilians		Civilians	Non-civilians
1931	55	652	1939	1,414	86	34	356	163
1932	53	570	1940	11,185	1,586	280	220	79
1933	42	558	1941	9,893	1,184	255	209	83
1934	27	669	1942	5,286	743	138	216	85
1935	22	701	1943	2,976	327	79	251	104
1936	24	642	1944(1)	2,684	298	71	212	74
1937	28	615	(2)	2,018	288	53	282	76
1938	31	509	1945(1)	2,491	248	65	212	113
			(2)	1,829	231	48	288	121
			1946(1)	2,539	134	63	193	149
			(2)	1,880	130	46	260	154
			1947(1)	3,056	90	73	171	122
			(2)	2,196	86	53	238	128

* Corrected to 1940 classification.
(1) Original notifications.
(2) Fully corrected for diagnosis revision (excluding Port Health Districts).

Table XLI gives notification rates and fatality rates (deaths per thousand notifications) by single years from 1931 to 1947, distinguishing civilians and non-civilians from 1939. The notification rates prior to 1944 multiplied by the factor 1·045 (page 72) are shown below in series with the uncorrected rates during 1944 to 1947.

1931	57	1937	29	1943 ...	83
1932	55	1938	32	1944 ...	71
1933	44	1939	36	1945 ...	65
1934	28	1940	293	1946 ...	63
1935	23	1941	266	1947 ...	73
1936	25	1942	144		

Deaths (including non-civilians) per thousand corrected notifications in 1944 to 1947 numbered 257, 269, 253 and 234. Corresponding fatality rates for 1931 to 1943 can be obtained approximately from Table XLI by increasing the fatality rates shown there by one-third to compensate for the fact that notifications in those years were not fully corrected for amendment of diagnosis. Fatality rates so adjusted were 869 per thousand notifications in 1931 and 679 in 1938, respectively almost four times and three times as high as in 1947.

Table XLII.—Cerebro-spinal Fever : Prevalence and Fatality in Regions and different classes of Area. 1944 to 1947 (Civilians).

	Notified cases† per million (excluding non-civilians)				Deaths per 1,000 cases notified†		
	1944	1945	1946	1947	1944–45	1946	1947
England and Wales	**53**	**48**	**46**	**53**	**285**	**260**	**238**
Regional Summary :							
South East	48	44	44	46	286	263	249
Greater London	46	46	48	49	310	277	258
Remainder	50	41	40	42	257	242	236
North	55	52	50	60	310	268	234
North I	78	69	67	92	263	234	199
North II	51	49	54	54	356	279	229
North III	47	47	50	61	326	260	266
North IV	52	49	42	48	317	290	235
Midland	50	50	49	55	264	212	236
Midland I	48	47	49	64	289	209	206
Midland II	55	54	50	38	222	219	337
East	52	39	33	41	331	383	312
South West	77	39	39	47	256	229	202
Wales	63	59	47	60	222	310	205
Wales I	69	68	54	68	197	219	180
Wales II	49	35	29	41	322	750	310
Density Summary :							
County Boroughs*	62	56	57	68	265	233	204
Other Urban Districts* ...	52	47	40	48	285	279	266
Rural Districts*	49	39	38	39	304	271	251

* Excluding Greater London.
† Fully corrected for diagnosis revision.

Table XLII gives the distribution of notified cases by regions from 1944 to 1947 and compares regional fatality rates during 1944–45, 1946 and 1947. In each of the four years prevalence was highest in the North I region (Durham and Northumberland) with notification rates 47, 44, 46 and 74 per cent. higher each year than the average for England and Wales. The regions with the lowest rates were Greater London in 1944, Wales II in 1945 and 1946, and Midland II in 1947. The ratio of deaths to notifications in 1944–45 was highest (356 per thousand) in North II and lowest (197) in Wales I. In 1946 Wales II had a fatality rate of 750 per thousand (15 deaths from 20 cases), followed by East with 383, while the lowest rate, 209, was in Midland I. In 1947 Midland II gave the highest rate of 337 ; East came next with 312 and Wales I was lowest with 180 per thousand. Each year notification rates were higher in the large towns than in the small towns and rural districts, but the fatality rate showed

an opposite tendency, being lower in county boroughs than in other urban and rural districts. A possible explanation is that notification has been less complete in rural districts than in large towns but there is no definite evidence that this is so.

Table XLIII.—Cerebro-spinal Fever : Corrected Notification and Fatality Rates by Sex and Age. 1946 and 1947.

Age	Notifications* per million living				Deaths per 1,000 notifications*			
	1946		1947		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
Civilians								
0–	254	212	315	219	367	361	329	356
5–	96	77	106	95	119	124	90	88
15–	30	24	32	26	173	168	142	126
45–	16	13	12	15	371	417	382	422
65 and over ...	5	7	8	6	500	706	867	867
All ages	54	40	62	44	257	263	236	240
Non-civilians ...	118†	12†	82†	4†	169	—	134	—

* Fully corrected for diagnosis revision.
† Numbers of notifications in England and Wales.

Table XLIII shows corrected notification and fatality rates by sex and age for 1946 and 1947. Notification rates were higher among males than females at each age up to 65. The rate at ages under 5 was almost three times that at ages 5–14 and five times the average for all ages. In both years the fatality rate of all ages combined was rather higher among females than males. There was little difference between the sexes at ages up to 45. There was a female excess at ages 45–64 in both years and at ages 65 and over in 1946, but there was no difference between the sexes at ages 65 and over in 1947. In both sexes fatality was lowest at ages 5–14. The highest fatality was among persons aged 65 and over whose rate in 1947 was ten times as great as at ages 5–14.

8. Scarlet Fever.—Deaths from scarlet fever in the five years 1935–39 averaged 347 per year, and in the next six years, 1940–45, 119 per year. In 1946 and 1947 deaths numbered 43 and 42 respectively. The death rate per million at ages under 15 was 2,282 in 1861–70, 271 in 1901–10, 24 in 1936–40, and 3 in 1946 and 1947. Scarlet fever has ceased to be a numerically important cause of death among the children of this country.

The notification rates per thousand persons, all ages, for each year since 1911 were as follows :—

1911	...	2·90	1920	...	3·19	1929	...	3·05	1938	...	2·41
1912	...	2·98	1921	...	3·64	1930	...	2·76	1939	...	1·89
1913	...	3·58	1922	...	2·85	1931	...	2·05	1940	...	1·60
1914	...	4·47	1923	...	2·24	1932	...	2·12	1941	...	1·50
1915	...	3·59	1924	...	2·16	1933	...	3·21	1942	...	2·19
1916	...	2·19	1925	...	2·36	1934	...	3·76	1943	...	3·01
1917	...	1·45	1926	...	2·10	1935	...	2·96	1944*	...	2·40
1918	...	1·44	1927	...	2·16	1936	...	2·53	1945*	...	1·89
1919	...	2·29	1928	...	2·61	1937	...	2·33	1946*	...	1·38
									1947*	...	1·37

* Fully corrected for diagnosis revision.

The effect of full correction for the revision of diagnosis from 1944 onwards is small and cannot be held responsible for the rapid decline after 1943. There were similar periods of low prevalence in 1917–18 and in 1939–41.

Table XLIV shows the notification rates at ages under 5 and at 5–14 during 1944 to 1947 and deaths per thousand notifications (all ages) from 1940–41. These fatality rates have been adjusted to allow for the absence of full correction of diagnosis prior to 1944. In fact, however, correction of diagnosis in respect of scarlet fever has little effect upon notification and fatality rates, the ratio of corrected to original notifications being about 98 per cent.

Table XLIV.—Scarlet Fever : Corrected Notification Rates in Regions and different classes of Area at Ages 0-4, 5-14 in 1944 to 1947. Fatality at all Ages, 1940-1947.

Area	Notifications† per 100,000 living at								Deaths per 1,000 cases notified at all ages (civilians only)				
	Ages 0–4 (l.b.d.)				Ages 5–14 (l.b.d.)								
	1944	1945	1946	1947	1944	1945	1946	1947	1940–41‡	1942–43‡	1944–45†	1946†	1947†
England and Wales ...	**652**	**531**	**410**	**362**	**1,056**	**836**	**647**	**658**	**2·4**	**1·2**	**1·1**	**0·7**	**0·7**
Regional Summary :													
South East	568	454	382	308	879	733	633	590	1·8	0·9	0·9	0·6	0·7
Greater London ...	619	531	454	397	870	796	768	742	1·3	0·7	0·9	0·4	0·7
Remainder	511	366	293	194	890	663	473	417	2·1	1·3	0·8	1·0	0·6
North	809	652	471	455	1,300	986	702	787	2·5	1·0	1·0	0·8	0·8
North I	557	511	388	368	881	743	591	717	4·2	1·0	1·0	1·7	2·0
North II	646	549	402	435	990	869	631	845	2·5	0·5	1·1	—	1·2
North III	910	667	524	506	1,520	941	719	829	2·2	0·8	0·9	0·5	0·3
North IV	881	718	486	463	1,416	1,137	753	777	2·3	1·3	1·0	0·8	0·6
Midland	636	549	407	385	1,074	907	667	714	2·6	1·8	1·6	0·6	0·8
Midland I	578	475	392	387	879	717	654	758	3·0	2·1	1·6	0·3	0·7
Midland II	756	698	437	382	1,452	1,281	694	624	1·9	1·1	1·6	1·3	1·1
East	478	308	243	205	1,006	577	425	371	2·9	1·6	1·1	2·2	—
South West	379	320	245	144	662	547	456	325	2·2	1·8	2·0	1·0	0·7
Wales	671	586	521	401	953	770	679	658	3·0	1·4	1·4	0·5	0·6
Wales I	751	655	613	485	1,047	856	769	778	3·2	1·0	1·0	—	0·3
Wales II	469	402	272	174	714	547	443	345	2·4	2·7	2·8	3·0	1·9
Density Summary :													
County Boroughs* ...	754	626	470	438	1,195	958	683	764	2·3	1·0	0·9	0·5	0·6
Other Urban Districts*	665	526	393	338	1,112	849	623	626	2·6	1·4	1·2	1·2	0·8
Rural Districts* ...	504	385	294	235	900	653	519	466	2·7	1·9	1·7	0·9	1·0

* Excluding Greater London. † Fully corrected for diagnosis revision. ‡ Adjusted to allow for diagnosis revision.

The notification rate among children under 5 fell from 652 per 100,000 in 1944 to 362 in 1947. At ages 5–14 the rates were 1,056 in 1944 and 658 in 1947. High notification rates in 1946 and 1947 at ages under 5 were reported from the North region and from Wales I. Rates were low in the South West, South East (excluding Greater London), East and Wales II. County boroughs had higher rates than other urban districts whose rates in turn exceeded those of rural districts.

At ages 5–14 in 1946 and 1947 the regional variations were similar to those of the younger children with the same clearly defined gradation from urban to rural areas.

In 1946 the ratio of deaths to notifications was highest in Wales II (3 per thousand) followed by East (2·2 per thousand). There were no deaths in North II or Wales I. In 1947 North I had the highest fatality rate (2·0 per thousand) followed by Wales II (1·9) and there were no deaths in the East Region. In contrast with notification rates, fatality was lowest in the county boroughs and highest in urban districts in 1946 and in rural districts in 1947.

Table XLV.—Scarlet Fever : Corrected Notification and Fatality Rates by Sex and Age. 1944 to 1947.

Ages (l.b.d.)	1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
	Notifications* per 100,000 living							
0– ...	55	47	49	53	42	34	25	24
1– ...	487	465	399	368	321	290	278	262
3– ...	1,201	1,245	988	1,007	735	746	708	694
5– ...	1,339	1,583	1,055	1,236	789	932	786	970
10– ...	551	755	436	611	353	499	344	545
15 and over	31	43	23	33	19	25	19	25
All ages ...	**252**	**230**	**199**	**182**	**138**	**138**	**131**	**142**
	Deaths per 1,000 notifications*							
0– ...	10·3	6·3	17·1	5·6	6·6	—	17·9	9·6
1– ...	3·3	1·8	3·7	2·5	0·5	1·6	1·0	2·3
3– ...	1·3	1·3	0·9	0·9	0·2	0·7	0·6	0·9
5– ...	0·8	1·0	0·5	0·8	0·7	0·5	0·4	0·2
10– ...	0·3	0·6	0·5	0·7	0·6	0·4	—	0·9
15 and over	3·2	1·5	1·4	3·0	1·5	1·6	1·8	1·4
All ages ...	**1·2**	**1·1**	**1·0**	**1·2**	**0·7**	**0·8**	**0·7**	**0·8**

* Fully corrected for diagnosis revision.

Table XLV gives notification and fatality rates by sex and age from 1944 to 1947. At ages under 3 the male notification rate was usually higher than the female, but at older ages there was usually a female excess. Each year the highest rate for each sex was at ages 5–9 followed by ages 3–4.

Fatality in infancy was higher in boys than girls, but amongst adults there was no consistent difference between the sexes. There was a sharp decline in fatality after the first year of age. The fatality rate at all ages averaged 17·7 in 1911–1915 and 5·9 in 1931–1935 compared with 0·7 in 1946–1947.

9. Whooping Cough.—Deaths assigned to this cause during the five years 1935–1939 averaged 1,454 per year, and in the six years 1940–1945 1,120 per year. In 1946 there were 808, and in 1947 905 deaths. The mean annual death rate per million living at ages under 15 (Table 9) was 1,319 in 1851–1860, 815 in 1901–1910, 146 in 1936–1940, 140 in 1941–1945, 91 in 1946 and 99 in 1947.

Notification rates per thousand living at all ages since 1940, the year in which the disease was first made generally notifiable, have been :—

1940	1941	1942	1943	1944	1945	1946	1947
1·34	4·47	1·73	2·54	2·49	1·64	2·29	2·22

Rates from 1944 to 1947 are for notifications fully corrected for revision of diagnosis. In the case of whooping cough the effect of this correction is slight and can be safely ignored in this series.

Table XLVI shows that the notification rate at ages 0–4 was 19 in 1946 and 17 in 1947, compared with 20 in 1944 and 13 in 1945. In 1946 rates in the North and the Midland regions were above average for the country as a whole but in 1947 they were equal to the average. In both years reported prevalence was low in Wales and in the East region. There was a clear correlation in this age group between prevalence and urbanisation.

Table XLVI.—Whooping Cough : Notification Rates at Ages 0-4 and 5-14, Death Rates and Fatality Rates in Regions and different classes of Area. 1944 to 1947.

Area	Notifications† per 1,000 living at								Deaths at ages 0–4 (l.b.d.)							
	Ages 0–4 (l.b.d.)				Ages 5–14 (l.b.d.)				Per million living				Per 1,000 notifications†			
	1944	1945	1946	1947	1944	1945	1946	1947	1944	1945	1946	1947	1944	1945	1946	1947
England and Wales	**20**	**13**	**19**	**17**	**6**	**4**	**5**	**5**	**338**	**213**	**242**	**245**	**17**	**16**	**12**	**14**
Regional Summary :																
South East	23	11	17	19	7	4	5	6	388	141	170	210	17	13	10	11
Greater London	26	12	19	22	7	3	5	7	472	137	166	244	18	11	9	11
Remainder	20	10	14	16	8	4	5	6	295	145	175	166	15	14	13	11
North	18	14	24	17	4	3	5	4	294	237	324	296	16	17	14	17
North I	17	12	24	18	4	3	5	4	310	146	307	325	18	12	13	18
North II	15	13	22	11	5	4	6	3	330	224	305	137	22	17	14	13
North III	15	15	27	19	4	4	6	4	209	238	302	271	14	15	11	14
North IV	21	15	22	17	5	3	5	5	329	273	348	334	16	19	16	19
Midland	19	16	22	17	5	4	6	5	327	265	240	239	18	17	11	14
Midland I	18	18	23	18	5	4	6	5	292	309	252	247	16	18	11	14
Midland II	19	13	20	15	5	4	6	4	399	177	216	223	21	14	11	15
East	22	14	14	14	9	6	6	6	312	254	231	198	14	18	16	14
South West	17	14	15	17	7	5	6	7	292	204	185	206	17	15	12	12
Wales	15	8	11	11	4	2	2	3	414	256	279	275	28	31	25	25
Wales I	14	8	12	10	3	1	2	2	355	263	313	250	25	31	26	24
Wales II	16	7	10	12	5	2	3	4	560	238	188	340	36	33	19	29
Density Summary :																
County Boroughs*	20	16	24	19	4	3	5	5	331	255	313	301	17	16	13	16
Other Urban Districts*	18	13	18	16	5	3	5	5	283	218	231	220	16	17	13	14
Rural Districts*	17	12	15	13	7	5	6	6	334	203	219	196	20	18	15	15

* Excluding Greater London.

† Fully corrected for diagnosis revision.

At ages 5–14 notification rates were 6 per thousand in 1944, 4 in 1945 and 5 in 1946 and 1947. Apart from low rates in Wales, there was little variation between regions and between density aggregates.

Table XLVI also gives death rates per million living and fatality rates per thousand notifications at ages under 5. The death rates were 338 in 1944, 213 in 1945, 242 in 1946 and 245 in 1947. Regions with relatively high mortality were the four North regions and Wales I in 1946, and North I and IV and Wales II in 1947. The density aggregates showed the same gradation in respect of death rates as they did for notifications, with highest rates in the county boroughs.

The ratio of deaths to notifications at ages under 5 was 17 per thousand in 1944, 16 in 1945, 12 in 1946 and 14 in 1947. The highest ratios were registered in Wales, but in view of the low notification rates in this area, it is probable that notification has been less complete there than in other parts of the country.

Table XLVII gives notification and fatality rates by sex and age from 1944 to 1947. It is interesting to observe that, although the female notification rate exceeded the male at each age, nevertheless the combined rate at all ages for males exceeded that for females in 1944–1946 and equalled it in 1947. The explanation of this paradox is that in the older age groups, where notification rates are low, there are considerably more women in the population than men, while in the younger age groups, where notification rates are high, there are more boys than girls.

In both sexes notification rates increased from the first year up to ages 3 and 4 and then rapidly declined.

Table XLVII.—Whooping Cough : Corrected Notification and Fatality Rates by Sex and Age. 1944 to 1947.

Ages (l.b.d.)	1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
	Notifications* per 1,000 living.							
0– ...	14·5	15·1	9·4	10·0	12·8	14·1	12·2	13·2
1– ...	19·4	22·0	12·7	14·4	18·5	20·8	16·8	19·1
3– ...	20·7	24·1	14·2	16·5	21·0	24·7	18·9	22·6
5– ...	9·8	11·2	6·0	7·0	8·6	10·0	9·0	10·3
10– ...	0·8	1·0	0·5	0·6	0·6	0·8	0·6	0·7
15 and over	0·0	0·1	0·0	0·0	0·0	0·1	0·0	0·1
All ages ...	**2·7**	**2·3**	**1·8**	**1·5**	**2·4**	**2·2**	**2·2**	**2·2**
	Deaths per 1,000 notifications.*							
0– ...	62·6	72·1	58·2	64·9	52·4	56·1	46·9	54·9
1– ...	9·4	13·0	9·1	14·1	6·7	10·3	9·8	12·8
3– ...	0·9	3·0	1·7	3·4	1·7	2·1	1·2	2·2
5– ...	0·9	1·1	0·7	1·5	0·2	0·6	0·2	1·3
10– ...	0·9	—	1·4	—	1·2	1·0	—	—
15 and over	2·7	1·6	—	1·3	3·0	3·4	—	2·0
All ages ...	**10·3**	**12·0**	**9·9**	**12·0**	**8·1**	**9·3**	**8·8**	**10·6**

* Fully corrected for diagnosis revision.

Fatality rates for girls exceeded those for boys at ages up to 10. At higher ages deaths were few and there was no consistent difference between the sexes. In each year since 1944 the average fatality rate at all ages has been greater among females than males. In infancy there was one death in 1946–47 for every 20 cases notified; at ages 1 and 2 one death per 100 notifications, and at 3 and 4 one to two deaths per 1,000 notifications.

10. Diphtheria.—Deaths from diphtheria, which numbered 2,898, 2,861, 2,133, 2,480, 2,641 in the five years 1937 to 1941, and then declined rapidly to 722 in 1945, decreased further to 472 in 1946 and 244 in 1947. The death rate per million living at ages under 15, which averaged 298 in 1921–30 and 288 in 1931–40 and declined after 1941 to 67 in 1945, improved to 40 in 1946 and 23 in 1947. (Table 9).

Table XLVIII.—Diphtheria: Mortality* according to Age, 1906—1947.

Years	Ages (l.b.d.)								
	0–	1–	2–	3–	4–	5–	10–	15–	25 and over
Deaths per 100,000 living at each age (Live Births† at under 1 year).									
1906–10	24	82	88	104	101	51	8	1	1
1911–15	20	67	74	89	89	50	10	1	0
1916–20	19	65	77	91	93	52	11	2	0
1921–25	15	49	53	61	62	36	8	1	0
1926–30	15	43	46	51	56	36	9	1	1
1931–35	10	28	41	55	59	41	10	1	1
1936	11	21	44	52	64	47	10	1	0
1937	11	22	41	53	65	44	11	1	0
1938	9	19	37	53	58	47	11	1	0
1939	7	15	33	46	43	32	8	1	0
1940	9	23	37	48	53	37	9	1	0
1941	13	22	43	59	68	36	8	2	0
1942	7	17	24	38	41	26	6	2	0
1943	8	11	19	26	29	17	5	2	0
1944	4	9	12	16	20	12	4	1	0
1945	2	10	8	11	11	9	3	1	0
1946	3	7	6	7	7	4	1	1	0
1947	1	3	3	3	4	3	1	0	0
Rates per cent. of corresponding rate at 5–9 years.									
1906–10	—	161	173	204	198	100	16	2	2
1911–15	—	134	148	178	178	100	20	2	1
1916–20	—	125	148	175	179	100	21	4	1
1921–25	—	136	147	169	172	100	22	3	1
1926–30	—	119	128	142	156	100	25	3	1
1931–35	—	68	100	134	144	100	24	2	1
1936–39	—	45	91	120	136	100	23	2	0
1940	—	62	100	130	143	100	24	3	1
1941	—	61	119	164	189	100	22	6	1
1942	—	65	92	146	158	100	23	8	1
1943	—	65	112	153	171	100	29	12	3
1944	—	75	100	133	167	100	33	8	2
1945	—	111	89	122	122	100	33	11	3
1946	—	175	150	175	175	100	25	18	8
1947	—	100	100	100	133	100	33	7	3

* Mortality corrected to conform with the classification in use from 1940.
† Infant mortality rates based on related live births from 1926 onwards.

The trend of death rates since 1906 at different ages and the change in relative mortality in terms of that at ages 5–9 are shown in Table XLVIII. In 1946 the death rates in the second, third, fourth and fifth years of age fell to about 7 per million living ; and in 1947 they reached the low level of about 3 per million. At ages 5–9 years the rate fell to 4 in 1946 and 3 in 1947 ; and at 10–14 it reached 1 per million in both years. The mean annual rates in successive triennial periods since 1935 are compared below :—

	0–	1–	2–	3–	4–	5–	10–	15–24
1936–38	11	20	41	52	62	47	11	1
1939–41	10	20	38	51	55	35	9	2
1942–44	7	12	18	27	30	18	5	2
1945–47	3	7	6	7	7	5	2	1

No appreciable fall was evident in 1939–41 at any age up to 4 years, but at age 4 the rate improved by 11 per cent., at 5–9 by 26 per cent., and at 10–14 by 18 per cent. In 1942–44 the improvement had spread to the younger ages also, the rates at successive years of age under 5 being 30, 40, 53, 47 and 45 per cent. below the corresponding rates of 1939–41, compared with 49 per cent. at 5–9 and 44 per cent. at 10–14. Comparing 1945–47 with the preceding period in the same way, the further improvements at successive years of age under 5 were 57, 42, 67, 74 and 77 per cent., whilst at 5–9 and 10–14 the rates fell by 72 and 60 per cent. By 1947 the mortality risk had become practically uniform at ages between 1 and 10 years (Table XLVIII).

Table XLIX.—Diphtheria: Mortality at Ages 0-4, 5-14 in Regions and different classes of Area, 1938-39, 1940-41, and each year 1944 to 1947.

Area	Deaths per million living					
	1938–39†	1940–41	1944	1945	1946	1947
	Ages 0–4					
England and Wales ...	**316**	**376**	**117**	**81**	**59**	**29**
Regional Summary :						
South East	181	171	50	42	34	22
Greater London ...	223	199	63	50	35	27
Remainder of S.E. ...	123	145	34	33	32	17
North	479	537	179	124	93	37
North I	573	551	227	246	148	46
North II	339	460	230	117	48	26
North III	356	373	189	91	52	7
North IV	542	644	144	100	106	54
Midland	294	376	127	82	51	30
Midland I	292	393	152	82	57	40
Midland II	300	343	76	81	38	9
East	170	188	62	60	40	18
South West	230	409	49	24	42	22
Wales	402	574	184	116	76	34
Wales I	430	659	209	118	76	40
Wales II	324	351	123	110	75	18
Density Summary :						
County Boroughs* ...	414	599	159	111	84	33
Other Urban Districts*	343	338	141	90	63	34
Rural Districts* ...	197	237	57	44	33	15
	Ages 5–14					
England and Wales ...	**243**	**221**	**79**	**59**	**29**	**18**
Regional Summary :						
South East	138	95	39	33	12	13
Greater London ...	146	118	38	32	18	12
Remainder of S.E. ...	126	76	39	34	6	14
North	366	311	130	90	40	21
North I	509	345	221	129	69	34
North II	219	174	91	56	10	5
North III	251	256	121	97	30	21
North IV	402	367	108	78	41	20
Midland	261	214	74	57	35	20
Midland I	239	205	88	57	35	25
Midland II	2	229	45	57	34	11
East	137	90	19	30	12	11
South West	119	288	51	36	21	21
Wales	256	331	88	66	51	26
Wales I	240	357	87	66	66	35
Wales II	300	270	91	66	10	—
Density Summary :						
County Boroughs* ...	284	358	97	77	40	21
Other Urban Districts*	294	217	102	73	29	23
Rural Districts* ...	188	123	46	29	20	11

* Excluding Greater London.
† Corrected to conform with the method of classification from 1940 onwards.

Table XLIX shows the trend of death rates at 0–4 and 5–14 since 1938 in each region and class of area. By 1945 the rates for England and Wales as a whole had fallen to 81 and 59 per million at these age groups, and by 1947 they had declined to 29 and 18. Expressed as percentages of the corresponding mean annual rate in 1938–39, the rates for 1944, 1945, 1946 and 1947 were :—

	Ages 0–4 (l.b.d.)				Ages 5–14 (l.b.d.)			
	1944	1945	1946	1947	1944	1945	1946	1947
Greater London	28	22	16	12	26	22	12	8
Rest of South East	28	27	26	14	31	27	5	11
North	37	26	19	8	36	25	11	6
Midland	43	28	17	10	28	22	13	8
East	36	35	24	11	14	22	9	8
South West	21	10	18	10	43	30	18	18
Wales	46	29	19	8	34	26	20	10
County Boroughs	38	27	20	8	34	27	14	7
Other Urban Districts ...	41	26	18	10	35	25	10	8
Rural Districts	29	22	17	8	24	15	11	6
England and Wales	**37**	**26**	**19**	**9**	**33**	**24**	**12**	**7**

In 1945 the relative improvement was slightly greater in rural than urban areas at the pre-school ages, and was considerably greater at the school ages. By 1947 the degree of improvement was almost level in town and country at both age periods, but Greater London failed to show such a sharp fall at ages 0–4 as the other large towns.

Of the regions, the North showed the greatest decline in mortality, and the northern excess over national rates, which amounted to 50 per cent. in 1938–39 at each age period, was reduced to 28 per cent. at 0–4 and 17 per cent. at 5–14 by 1947.

Table L.—Diphtheria : Corrected Notification and Fatality Rates by Sex and Age (civilians) for years 1944 to 1947.

Ages (l.b.d.)	1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
	Notifications* per 100,000 living							
0– ...	48	33	30	25	28	18	12	8
1– ...	122	102	91	75	72	54	42	28
3– ...	234	228	188	172	118	108	64	53
5– ...	248	266	201	221	123	124	58	56
10– ...	143	173	113	138	68	90	26	38
15 and over	13	27	11	20	8	14	4	6
All ages ...	**58**	**59**	**46**	**46**	**27**	**30**	**13**	**13**
	Deaths per 1,000 notifications*							
0– ...	113	63	112	72	130	164	167	200
1– ...	80	109	101	108	93	109	72	110
3– ...	68	89	61	59	52	72	58	65
5– ...	48	46	43	43	32	40	50	50
10– ...	28	19	25	18	22	11	35	18
15 and over	22	17	30	20	29	29	27	18
All ages ...	**46**	**38**	**45**	**35**	**40**	**38**	**50**	**40**

* Fully corrected for diagnosis revision.

Table LI.—Diphtheria : Corrected Notification Rates in Regions and different classes of Area at Ages 0-4, 5-14 in each year 1944 to 1947. Fatality at all Ages, 1940-1947.

Area	Notifications† per 100,000 living								Deaths per 1,000 cases notified at all ages				
	Ages 0–4 (l.b.d.)				Ages 5–14 (l.b.d.)								
	1944	1945	1946	1947	1944	1945	1946	1947	1940–41‡	1942–43‡	1944–45†	1946†	1947†
England and Wales	**139**	**106**	**73**	**37**	**207**	**169**	**102**	**44**	**67**	**54**	**40**	**39**	**44**
Regional Summary :													
South East	61	54	47	27	64	82	59	27	68	58	51	37	55
Greater London	82	71	59	32	77	104	75	36	68	58	44	37	46
Remainder of S.E.	38	34	32	20	50	57	41	17	64	60	63	36	73
North	232	170	113	51	366	283	151	65	69	53	37	36	36
North I	338	273	167	61	600	500	247	88	68	56	35	37	43
North II	188	136	63	28	260	189	99	29	75	57	43	23	30
North III	252	150	97	38	378	241	112	40	56	48	36	32	26
North IV	190	151	113	60	288	240	146	78	79	54	37	40	38
Midland	125	98	64	39	179	149	91	45	66	55	46	46	46
Midland I	152	112	80	52	221	163	101	57	70	57	44	44	44
Midland II	70	68	30	14	99	121	72	19	57	49	51	50	57
East	58	43	46	22	97	78	65	21	65	57	43	38	31
South West	66	60	33	24	108	79	54	22	74	69	42	64	82
Wales	209	147	93	36	307	192	152	62	57	43	37	40	43
Wales I	211	145	110	43	306	197	177	75	59	45	38	38	42
Wales II	205	154	47	18	309	180	87	30	54	38	35	49	47
Density Summary :													
County Boroughs*	224	154	103	54	319	238	132	60	73	53	36	39	37
Other Urban Districts*	135	104	74	33	228	181	110	44	61	55	45	39	51
Rural Districts*	64	60	35	21	106	90	62	27	61	51	42	43	44

* Excluding Greater London.
† Fully corrected for diagnosis revision.
‡ Adjusted to allow for diagnosis revision.

Notified cases of diphtheria which, after correction of diagnosis, totalled 23,199 in 1944 and 18,596 in 1945, diminished to 11,986 in 1946 and 5,609 in 1947. Details of these by sex, age and region are given in Table 28A for each year 1946 and 1947. Table L gives the notifications, fully corrected for diagnosis revision, per 100,000 living at six age groups, and also the deaths per thousand notifications, in each year 1944 to 1947. During that period the rates of prevalence fell rather more rapidly at ages 10–14 than at other ages; the degree of male excess at ages 1 and 2 and at ages 3 and 4 tended to increase whilst the degree of female excess at 10–14 also tended to increase. At all ages combined the prevalence rate decreased by about 78 per cent. in the three years, but no consistent change occurred in fatality, which remained at about 4 per cent. for females and slightly higher for males.

Table LI shows the trend of the corrected notification rates at ages 0–4 and 5–14 from 1944 to 1947 in each region and density aggregate. The degree of urban excess tended to diminish during the period, as shown below, where the rates of prevalence are expressed as percentages of the national rate.

Urban and rural aggregates (excluding Greater London)	Ages 0–4				Ages 5–14			
	1944	1945	1946	1947	1944	1945	1946	1947
County Boroughs	161	145	141	146	154	141	129	136
Other Urban Districts ...	97	98	101	89	110	107	108	100
Rural Districts	46	57	48	57	51	53	61	61

Similarly, the regional contrasts, shown below, diminished as the rates fell, the northern excess over the national rate shrinking from 67 to 38 per cent. at ages 0–4 and from 77 to 48 per cent. at ages 5–14.

Region	Ages 0–4				Ages 5–14			
	1944	1945	1946	1947	1944	1945	1946	1947
North	167	160	155	138	177	167	148	148
Wales	150	139	127	97	148	114	149	141
South East	44	51	64	73	31	49	58	61

Fatality ratios, also shown in Table LI, showed no consistent variation according to region.

Table LII.—Diphtheria : Notification Rates, Numbers of Corrected Notifications and degree of diagnosis revision in 25 Large Towns and aggregates of Other Urban and Rural Areas, 1946 and 1947 (non-civilians are excluded).

Area	Notifications per 100,000 living				No. of corrected notifications		Original per 100 corrected notifications	
	1946		1947					
	(1)	(2)	(1)	(2)	1946	1947	1946	1947
Sheffield C.B.	56	24	18	8	122	41	230	229
Birkenhead C.B. ...	144	68	155	54	89	73	212	288
Liverpool C.B.	203	70	142	48	513	367	290	295
Salford C.B.	90	43	68	18	72	32	211	372
Bradford C.B.	51	51	13	13	143	37	100	100
Kingston upon Hull C.B.	69	37	30	11	102	30	188	287
Swansea C.B.	7	9	6	7	13	10	77	90
Manchester C.B.... ...	82	39	38	12	259	80	210	325
Southampton C.B. ...	30	30	8	8	48	13	100	100
West Ham C.B. ...	98	60	53	19	98	33	163	270
Leeds C.B.	48	26	24	10	126	51	181	233
Newcastle upon Tyne C.B.	59	66	26	17	186	50	89	152
London Admin. County	43	24	31	14	743	450	179	221
Cardiff C.B.	57	26	43	9	58	20	221	495
Sunderland C.B.... ...	62	58	33	27	101	48	108	123
Plymouth C.B.	86	40	54	27	70	50	216	196
Leicester C.B.	32	25	24	10	68	27	126	248
Birmingham C.B. ...	82	31	59	21	323	223	264	282
Stoke on Trent C.B. ...	36	24	14	6	63	16	152	231
Bolton C.B.	62	53	35	10	85	17	118	335
Portsmouth C.B. ...	7	7	8	7	15	15	100	113
Coventry C.B.	72	50	40	22	115	54	144	178
Bristol C.B.	47	9	39	11	38	46	513	365
Croydon C.B.	19	15	12	10	34	24	132	125
Nottingham C.B. ...	46	16	18	3	44	9	298	578
Other County Boroughs	54	39	28	18	2,030	955	138	154
Other Urban Districts ...	35	26	18	11	4,525	1,997	134	159
Rural Districts	26	20	14	9	1,518	724	128	148
England and Wales ...	**44**	**29**	**25**	**13**	**11,601**	**5,492**	**154**	**188**

(1) Original notifications.

(2) Fully corrected for diagnosis revision.

Table LII compares, for the larger towns, rates based upon original notifications with those based upon corrected notifications, and the final columns show how great was the variation in the extent of diagnosis correction. In this and the corresponding table in the Text for 1940-45 (page 103) the 25 towns are arranged in descending order of the crude notification rates during the period 1935–38 before immunisation began to be applied on an extensive scale. Comparison is made below between the average annual notification rates for the first ten towns and the last ten towns of that sequence in 1935–38, 1944–45, 1946 and 1947.

	Original notifications per 100,000				Corrected notifications per 100,000		
	1935–38*	1944–45	1946	1947	1944–45	1946	1947
10 towns with highest rates in 1935–38	264	129	83·0	53·1	83	43·1	19·8
10 towns with lowest rates in 1935–38	142	74	48·9	30·3	50	27·0	12·7
Ratio	1·9	1·7	1·7	1·8	1·6	1·6	1·6

* A few corrections were made in this period, but not by I.D. Hospitals.

The relative excess of notified diphtheria in the ten towns with highest rates in 1935–38 compared with the ten with lowest rates was only slightly reduced by 1947, notwithstanding the great decline in all the rates. It is evident also that no part of the excess was accounted for by differences in the ratio of original to corrected notifications. Such differences may arise from varying tendencies to notify suspected diphtheria or from variation in completeness of recording diagnosis corrections in the quarterly returns. Two towns shown in the table have recorded no changes in the original rates due to diagnosis correction during the four years 1944-47, whereas other towns show reductions by correction amounting to two-thirds or more.

Comparison of small towns with rural districts leads to a similar conclusion, that the *relative* prevalence has not changed greatly despite the rapid decline in absolute rates since 1935–38. In that period "other urban districts" showed an average annual rate of 132 per 100,000 compared with 99 in rural districts; in 1944–45 the original notification rates were 59 and 38 respectively; and in 1947 they were 18 and 14, corrected rates being 11 and 9.

Table LIII gives, for each of the 25 largest towns and for England and Wales, the proportions of children known to have been immunised out of the populations aged 0–4 and 5–14 at the end of 1947, according to annual returns made to the Ministry of Health and populations estimated by the Registrar General. This information is derived from the registers of immunisations performed by the Local Authority and it does not take account, for the most part, of children immunised by private arrangements. It is difficult, also, to free the local registers from children who remove to other areas or who die; on the other hand many children move into an area who have been immunised elsewhere and may not be included in the returns. Consequently, by the end of 1947 the estimates of total resident children who had at some time been immunised had become subject to large errors, and the proportions given in the last columns of the table must be regarded only as the best estimates which it was possible to make from the information available to the Local Authorities concerned. The table shows also the notification and death rates in the same towns in years 1946 and 1947. Corresponding rates for the same towns were given for 1944 and 1945 in Table LI of the Review for 1940–45, together with the estimated proportions who had been immunised by the end of 1945.

Table LIII.—Diphtheria : Proportions of children known to have been immunised in 25 large Towns, other Urban and Rural Areas. Notification and Mortality rates at 0-4, 5-14 in 1946 and 1947.

Area	Corrected notifications per 100,000 living at—				Deaths per 100,000 living in 1946–1947 at ages—		Proportion known to have been immunised by end of 1947 per 1,000 living aged—	
	Ages 0–4 (l.b.d.)		Ages 5–14 (l.b.d.)					
	1946	1947	1946	1947	0–4	5–14	0–4	5–14
Birkenhead C.B.	201	158	192	188	15·5	2·5	291	564
Birmingham C.B.	74	76	120	61	3·0	1·4	668	923
Bolton C.B.	143	45	205	35	11·5	7·5	428	717
Bradford C.B.	183	57	188	43	11·5	4·2	339	459
Bristol C.B.	29	40	42	40	—	1·8	464	674
Cardiff C.B.	38	24	66	32	2·6	1·6	654	771
Coventry C.B.	113	47	169	75	2·0	8·0	378	615
Croydon C.B.	26	20	51	44	—	3·4	418	655
Kingston upon Hull C.B. ...	82	31	148	36	1·8	—	475	562
Leeds C.B.	63	27	85	36	1·3	2·3	566	916
Leicester C.B.	44	25	69	29	—	—	434	872
Liverpool C.B.	218	140	213	148	19·3	3·5	342	722
London Admin. County ...	86	55	90	55	6·0	0·8	413	561
Manchester C.B.	74	46	178	37	3·6	4·9	480	767
Newcastle upon Tyne C.B.	146	65	196	48	18·8	7·1	422	818
Nottingham C.B.	32	7	37	5	1·9	2·5	429	803
Plymouth C.B.	78	79	161	84	2·9	2·0	393	684
Portsmouth C.B.	15	47	36	25	2·4	—	474	793
Salford C.B.	102	44	169	71	3·3	4·2	735	925
Sheffield C.B.	74	34	79	28	1·1	2·2	536	807
Southampton C.B.	79	23	78	17	—	4·3	350	715
Stoke on Trent C.B. ...	66	16	80	21	6·1	5·1	499	706
Sunderland C.B.	195	95	131	85	6·1	10·4	649	727
Swansea C.B.	60	8	14	19	—	—	446	921
West Ham C.B.	144	65	274	87	—	6·2	376	587
Other County Boroughs ...	103	49	135	65	5·7	2·9	431*	728*
Other Urban Districts ...	62	27	95	38	3·9	2·4	463*	730*
Rural Districts	33	20	60	26	2·3	1·5	432*	732*
England and Wales	**70**	**37**	**100**	**44**	**4·2**	**2·3**	**456***	**727***

* These figures exclude districts whose immunisation records were incomplete.

Notification rates in individual towns continued to show great variation from year to year, superimposed on the general downward trend and a persistent tendency to higher rates in the north. As was pointed out in the Text for 1940–45 (page 105) the variations in epidemicity and the northern excess tended to obscure any relation there might be between degree of immunisation attained in the populations of children of different towns and the notification and death rates. Separating the 11 towns in North region* from 14 other towns, the average corrected notification rates per 100,000 were :—

	Ages 0–4				Ages 5–14			
	1944	1945	1946	1947	1944	1945	1946	1947
11 North Region towns ...	282	219	135	67	382	321	162	69
14 Other towns	122	93	63	38	183	152	92	42

* Birkenhead, Bolton, Bradford, Kingston upon Hull, Leeds, Liverpool, Manchester, Newcastle upon Tyne, Salford, Sheffield and Sunderland comprise this group. In the Review for 1940–45, Kingston upon Hull was inadvertently placed amongst the " other towns ".

The relative northern excess diminished between 1944 and 1947, but it was still very large in the latter year. The averages of the death rates per 100,000 in 1946–47 at ages 0–4 were 8·5 in northern compared with 1·9 in other towns, and at ages 5–14 they were 4·4 and 2·6 respectively, the contrast being much greater amongst the younger children.

In the table below the towns have been grouped according to the percentages estimated to have been immunised by the end of 1947 in the populations at the ages specified, separating the towns showing a percentage below and above the value for all county boroughs, namely 46·8 at ages 0–4 and 75·1 at 5–14.

Average rates of—	North Region towns grouped by immunised percentage (1947)				Other towns grouped by immunised percentage (1947)			
	Under 47 at 0–4	47 and over at 0–4	Under 75 at 5–14	75 and over at 5–14	Under 47 at 0–4	47 and over at 0–4	Under 75 at 5–14	75 and over at 5–14
Notifications per 100,000								
1944	342	233	406	353	126	114	194	170
1945	266	180	336	303	103	67	181	113
1946	178	98	180	141	69	48	118	57
1947	93	46	89	44	37	41	53	29
Deaths per 1,000								
1944–45 ...	25·5	9·8	11·5	9·4	7·6	11·1	5·5	3·6
1946–47 ...	15·3	2·9	4·7	4·1	1·3	3·5	4·0	0·9

The ranking of the towns according to extent of immunisation was not necessarily the same in the earlier years as in 1947, but for the most part it would correspond, and the figures show a consistent excess in average notification rates for the group of towns with lower proportions immunised than for the group with higher proportions immunised at the age period concerned, both in the north and elsewhere. Average death rates show a similar relation with immunisation in the northern towns at each age group and in the other towns at 5–14, though not in the other towns at ages 0–4. The amount and consistency of the excess is such as to constitute evidence that the proportions of children who had been immunised in these large towns was an important factor in determining the relative prevalence and mortality from diphtheria in a particular year. Notwithstanding this, there were large variations in notification and death rates in individual towns within each group, which must have been due to peculiarities in the activities of the infecting organism rather than to peculiarities in the protection of the child population.

11. Erysipelas.—Deaths from erysipelas during 1935–39 averaged 552 per year, and during 1940–45 151 per year. There were 82 deaths in 1946 and 61 in 1947. The C.M.I. was 3·6 for each sex in 1934, 1·0 in 1938, and since then it has fallen each year until in 1947 the indices were 0·129 for males and 0·175 for females. The crude death rate for both sexes was 8 per million in 1938, 6 in 1939, 5 in 1940 and 1941, 4 in 1942, 3 in 1943, 1944 and 1945, 2 in 1946 and 1 in 1947.

Table LIV shows that the number of notifications, which averaged about 17,000 per year during 1933–39, dropped rapidly, though not as rapidly as deaths, during the next eight years so that in 1947 notifications numbered fewer than 8,000. Probably this reduction in notifications indicates not so much a real reduction in prevalence as a change in the outlook of medical practitioners towards the disease. In most cases erysipelas responds readily to sulphonamide therapy, leading practitioners to regard notification as a procedure likely to be of small benefit either to the patient or to the community.

Table LIV.—Erysipelas : Deaths and Notifications, 1923-32 and each year 1933 to 1947.

Year	No. of deaths†	No. of notifications	Deaths per 1,000 notifications	Year	No. of deaths	No. of notifications	Deaths per 1,000 notifications
1923–27 ...	617*	13,907*	44	1940 ...	214	13,123	16
1928–32 ...	810*	16,433*	49	1941 ...	190	12,232	16
1933 ...	973	17,997	54	1942 ...	141	11,598	12
1934 ...	1,192	20,643	58	1943 ...	124	11,833	10
1935 ...	867	16,926	51	1944 ...	119	(*a*)11,240	
1936 ...	817	16,487	50			(*b*)11,142	11
1937 ...	485	15,166	32	1945 ...	119	(*a*) 9,995	
1938 ...	342	16,671	21			(*b*) 9,848	12
1939 ...	248	14,141	18	1946 ...	82	(*a*) 9,243	
						(*b*) 9,067	9
				1947 ...	61	(*a*) 7,956	
						(*b*) 7,845	8

* Mean annual. † Corrected to 1940 classification.
(*a*) Original notifications. (*b*) Corrected for diagnosis revision.

The fatality rate, measured by the ratio of deaths to notifications, was 58 per thousand in 1934, 18 per thousand in 1939, 10 in 1943, 12 in 1945, 9 in 1946 and 8 in 1947. The comparability of these rates is little affected by the full correction of notifications since 1944.

Table LV gives the notification and fatality rates by sex and age from 1944 to 1947. Incidence increased with advancing age and there was a consistent female excess at higher ages. Fatality was relatively high at ages 65 and over and in children under 5; and fatality among girls was much higher than among boys.

Table LV.—Erysipelas : Corrected Notification and Fatality Rates by Sex and Age, 1944 to 1947.

Ages (l.b.d.)	Notifications per 100,000 living								Deaths per 1,000 notifications			
	1944		1945		1946		1947		1944–5		1946–7	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Civilians												
0– ...	8	9	6	7	4	4	4	3	22	49	16	33
5– ...	7	8	6	5	4	4	3	4	6	6	—	—
15– ...	21	24	17	20	13	17	12	13	3	3	3	3
45– ...	44	51	38	49	36	45	33	39	9	7	6	3
65 and over	51	49	45	47	41	47	37	36	31	32	29	23
All ages ...	**27**	**30**	**23**	**28**	**19**	**25**	**17**	**20**	**12**	**11**	**10**	**7**
Non-civilians	222*	26*	127*	20*	42*	2*	29*	4*	—	—	—	—

* Numbers of notifications in England and Wales.

13-22. Tuberculosis.—Deaths from all forms of tuberculosis numbered 22,847 in 1946 and 23,550 in 1947, compared with 23,955 in 1945, and 25,539 in 1938. Since 1935 the annual fluctuations in this total have been :— —1,022, +287, —2,215, +84, +2,521, +526, —3,121, +100,— 1,486, —208, —1,108, +703. A substantial decrease in one year has usually been followed by only

a small decrease or by an actual increase in the year following, a sequence sometimes connected with severe winters and influenza epidemics. In 1947 the influenza rate was low, but the March quarter was exceptionally cold, the mean air temperature at Greenwich being the lowest recorded during the fifty years 1898–1947 (Table 32). The quarterly deaths in the three years 1945, 1946 and 1947 for each sex (including those of non-civilians registered in England and Wales) were :—

	March quarter		June quarter		September quarter		December quarter	
	M.	F.	M.	F.	M.	F.	M.	F.
Respiratory tuberculosis								
1945	3,512	2,243	2,999	1,865	2,428	1,784	3,138	2,044
1946	3,407	2,001	2,934	1,931	2,462	1,700	2,950	1,980
1947	3,594	2,295	2,917	1,956	2,504	1,784	3,043	2,063
Other tuberculosis								
1945	555	476	598	540	513	443	406	411
1946	517	399	514	490	431	374	365	392
1947	487	467	529	471	392	373	373	302

The increase of 703 deaths in 1947 compared with 1946 occurred for the most part in the March quarter (519), but in the September and December quarters respiratory tuberculosis registered small increases whilst deaths from other forms of tuberculosis showed decreases.

For reasons explained in the Review for 1940–45 (Text, pages 107–108), the civilian death rates from **respiratory tuberculosis** since 1939 have been greatly affected by selection at entry into and discharge from the Services, and the real trend of mortality is better indicated by death rates based upon the total populations including armed forces at home and abroad (notwithstanding that a few deaths from tuberculosis occurring in that population were not registered in England and Wales). In Table LVI, therefore, for years 1940 to 1947 both civilian and total death rates are shown.

At ages 0–4 the rates in 1946–47 continued to be well above those of 1938–39 and not much better than those of 1931–35. For older children new low levels were reached for boys aged 10–14 in 1946, but for girls there was no consistent change. Males between ages 15 and 55 registered lower total rates in 1946 than in any year preceding, followed by slight increases at most age groups in 1947. At 55–64 male mortality increased from 1,149 per million in 1945 to 1,213 in 1947, a rate greater than that of 1931–35 and any year 1936 to 1939. At 65–74 the rate of 812 per million in 1947 exceeded that of any year since 1935 and was 12 per cent. in excess of the 1931–35 rate. At 75 and over mortality in 1946 was the highest in the period covered by the table, but some improvement occurred in 1947.

For females aged 15–24, the downward trend of mortality from respiratory tuberculosis, interrupted in the early years of the war, was resumed in 1943, and continued in 1946, but an increase occurred in 1947. There have been no important changes in female rates at ages between 25 and 45 since 1942, nor at ages 45–64 since 1944. At ages over 65 mortality was higher in 1947 than in any of the five years preceding. At every age group of females over 10 with the exception of 25–34 the death rate in 1947 was below that of any year 1936 to 1939 ; whereas for males this was only true at ages between 10 and 55, considerable increases having occurred amongst older men.

Table LVI.—Tuberculosis of Respiratory System : Mortality by Sex and Age per million living. 1931-35 and each year 1936 to 1947.

Year	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over
MALES											
1931–35	85	42	64	490	963	961	1,140	1,368	1,176	723	275
1936	58	15	42	356	788	818	959	1,225	1,146	672	304
1937	63	22	40	365	760	803	979	1,200	1,159	690	286
1938	64	17	49	348	718	739	858	1,133	1,085	643	237
1939*	54	15	31	368	682	723	859	1,158	1,171	678	214
Deaths registered at home per million total population (including Armed Forces at home and abroad)											
1940	50	23	42	371	718	792	938	1,186	1,288	725	262
1941	92	32	45	430	653	769	948	1,218	1,253	726	288
1942	71	24	32	364	594	674	824	1,079	1,144	707	300
1943	85	20	28	337	564	667	833	1,179	1,281	736	294
1944	67	24	29	287	537	637	740	1,077	1,188	750	308
1945	65	19	38	266	574	632	725	1,024	1,149	781	285
1946	68	22	23	239	481	615	687	1,020	1,165	768	340
1947	77	15	29	241	500	632	679	1,034	1,213	812	267
Civilian death rates											
1940	50	23	42	398	1,419	969	1,000	1,213	1,288	725	262
1941	92	32	45	479	1,674	1,192	1,036	1,232	1,253	726	288
1942	71	24	32	411	1,664	1,161	960	1,101	1,144	707	300
1943	85	20	28	423	1,786	1,296	1,023	1,219	1,281	736	294
1944	67	24	29	355	1,688	1,379	942	1,120	1,188	750	308
1945	65	19	38	321	1,781	1,334	902	1,055	1,149	781	285
1946	68	22	23	289	903	694	710	1,030	1,170	767	340
1947	77	15	29	301	618	628	677	1,040	1,215	812	267
FEMALES											
1931–35	74	43	143	840	1,138	911	646	475	394	306	170
1936	63	26	107	670	1,039	757	528	390	350	273	167
1937	61	20	105	652	1,029	798	537	388	342	263	138
1938	44	28	79	605	931	728	464	340	308	233	148
1939	38	20	85	601	955	708	470	353	301	237	145
Deaths registered at home per million total population (including Armed Forces at home and abroad)											
1940	55	24	100	725	1,060	758	517	354	319	263	137
1941	84	30	101	719	1,052	773	489	345	314	242	132
1942	68	18	67	620	952	676	421	306	279	220	131
1943	71	20	78	570	878	682	412	307	272	211	124
1944	70	24	63	523	844	670	395	273	253	210	105
1945	69	27	68	512	865	657	418	288	229	218	126
1946	60	25	69	468	842	662	382	261	242	207	119
1947	70	24	63	502	899	730	411	267	249	224	133
Civilian death rates											
1941†	84	30	101	727	1,079	777	490	346	314	242	132
1942	68	18	67	643	1,033	687	422	306	279	220	131
1943	71	20	78	595	999	696	414	307	272	211	124
1944	70	24	63	537	962	687	396	274	253	210	105
1945	69	27	68	523	974	674	420	288	229	218	126
1946	60	25	69	473	875	666	382	261	242	207	119
1947	70	24	63	507	909	728	411	267	249	224	133

The rates for 1931–39 are corrected to 1940 classification.

* Total death rates based on mid-1939 population.

† Civilians from mid-1941.

In the table below, equivalent average death rates from respiratory tuberculosis at ages under 15 and 15–54, together with age-specific rates at 55—, 65—, 75 and over are expressed in terms of the corresponding mean annual rates in 1931–35 taken as 100.

Age Group	MALES					FEMALES				
	1931–35	1938	1945	1946	1947	1931–35	1938	1945	1946	1947
0–14 (E.A.D.R.)	100	68	64	59	63	100	58	63	59	60
15–54 (E.A.D.R.)	100	78	67	64	65	100	76	68	65	70
55–	100	92	98	99	103	100	78	58	61	63
65–	100	89	108	106	112	100	76	71	68	73
75 and over	100	86	104	124	97	100	87	74	70	78

The contrast between the recent trend of mortality of men over 55 and of other groups of the population may be due to more complete recognition of phthisis in elderly persons, exposure of men of these ages to the hardships of two wars and the removal from their numbers of an undue proportion of non-tuberculous men by war casualties in 1914–18. Late effects of unfavourable factors operating during the childhood of that " generation " would be expected also to appear in the rates of women of the same age groups, but of this the figures give only slight indications.

The comparative mortality index (Table LVIII) reached the low level of 0·855 for females of all ages in 1946, but increased to 0·893 in 1947, whilst the corresponding index for males fell to 0·903.

Table LVII.—Tuberculosis, non-Respiratory : Mortality by Sex and Age per million living, 1931-35 and each year 1936 to 1947.

Year	Meninges and Central Nervous System						Other non-respiratory Tuberculosis					
	0–	5–	10–	15–	25–54 E.A.D.R.	55 and over	0–	5–	10–	15–	25–54 E.A.D.R.	55 and over
	MALES						MALES					
1931–35 ...	414	123	66	49	13	3	219	71	61	105	71	75
1936 ...	313	129	60	42	11	3	152	52	42	92	66	61
1937 ...	319	91	66	42	13	2	168	55	43	79	71	60
1938 ...	297	96	57	42	13	3	156	45	39	87	61	52
1939 ...	284	90	52	38	12	4	125	53	34	89	63	60
1940 ...	300	96	55	48	13	3	146	41	35	89	65	62
1941 ...	402	136	67	55	14	4	188	46	43	91	61	59
1942 ...	321	107	67	53	14	2	134	50	46	84	65	59
1943 ...	288	110	55	51	12	5	134	42	36	74	56	54
1944 ...	273	102	62	51	12	2	109	34	34	67	51	59
1945 ...	266	100	65	47	11	2	107	38	35	67	53	49
1946 ...	221	86	72	42	10	3	87	21	27	51	50	43
1947 ...	215	83	53	39	11	5	92	33	25	46	44	44
	FEMALES						FEMALES					
1931–35 ...	356	125	73	48	10	2	160	59	50	84	58	62
1936 ...	283	98	58	47	9	2	129	37	38	66	51	45
1937 ...	291	89	61	50	9	1	132	46	43	72	48	52
1938 ...	300	100	60	40	8	2	112	40	36	73	45	42
1939 ...	252	77	66	47	9	2	102	38	32	69	41	40
1940 ...	278	96	71	61	9	2	118	34	26	80	50	40
1941 ...	370	138	80	70	11	2	141	50	34	83	43	48
1942 ...	290	101	69	64	12	1	92	30	44	79	49	42
1943 ...	277	106	63	72	11	3	101	32	34	74	42	46
1944 ...	234	95	78	58	10	4	86	33	26	67	42	44
1945 ...	246	107	70	60	10	2	84	29	41	55	35	42
1946 ...	198	97	67	52	9	2	64	28	22	53	34	37
1947 ...	184	78	55	52	9	2	65	26	29	57	34	35

The rates for 1931–39 are corrected to the 1940 Classification. Rates from 1939 onwards are based on deaths registered at home per million total population (including Armed Forces at home and abroad).

Table LVIII.—Tuberculosis of Various Sites : Comparative Mortality Indices.* 1931 to 1947.

Year	All forms		Respiratory		Meninges and C.N.S.		Intestines and peritoneum		Vertebræ and bones		Other forms	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1931 ...	1·393	1·469	1·384	1·469	1·440	1·392	1·754	1·912	1·532	1·719	1·236	1·233
1932 ...	1·298	1·377	1·274	1·364	1·381	1·280	1·779	1·649	1·453	1·877	1·281	1·339
1933 ...	1·292	1·342	1·291	1·353	1·207	1·178	1·503	1·723	1·464	1·522	1·188	1·100
1934 ...	1·199	1·244	1·191	1·235	1·218	1·220	1·344	1·447	1·414	1·564	1·074	1·120
1935 ...	1·125	1·163	1·125	1·175	1·103	1·006	1·229	1·314	1·289	1·387	0·971	0·983
1936 ...	1·088	1·104	1·089	1·112	1·056	0·998	1·080	1·225	1·207	1·330	1·021	0·948
1937 ...	1·083	1·116	1·083	1·120	1·043	1·022	1·190	1·093	1·116	1·235	1·045	1·120
1938 ...	1·000	1·000	1·000	1·000	1·000	1·000	1·000	1·000	1·000	1·000	1·000	1·000
1939 ...	1·013	0·985	1·024	0·996	0·921	0·934	0·957	0·915	1·054	1·140	0·985	0·926
1940 ...	1·181	1·084	1·223	1·093	1·056	1·065	1·090	1·045	1·100	0·987	1·164	1·049
1941 ...	1·280	1·114	1·362	1·092	1·415	1·368	1·274	1·004	1·033	1·105	1·321	1·123
1942 ...	1·188	0·991	1·267	0·971	1·202	1·132	1·272	1·082	1·296	1·058	1·130	0·985
1943 ...	1·263	0·975	1·328	0·955	1·132	1·142	1·024	0·963	1·217	0·991	1·136	0·978
1944 ...	1·205	0·922	1·269	0·908	1·046	1·021	0·970	0·808	1·052	0·941	1·112	0·998
1945 ...	1·166	0·918	1·234	0·913	1·013	1·041	0·925	0·711	1·008	0·805	1·080	0·918
1946 ...	0·936	0·855	0·971	0·860	0·875	0·891	0·689	0·534	0·691	0·796	0·812	0·865
1947 ...	0·903	0·893	0·931	0·916	0·813	0·813	0·561	0·623	0·578	0·661	0·832	0·862

* Non-civilian males are excluded from the experiences on and after 3rd September, 1939, and non-civilian females on and after 1st June, 1941.

Table LVII shows the trend of death rates from **tuberculosis of the meninges and central nervous system** at six age groups, based on total populations inclusive of armed forces during the war years. The equivalent average rates at 25–54 are the arithmetic means of the rates at 25–34, 35–44 and 45–54 Death rates at ages under 10 for boys and under 5 for girls reached new low levels in 1946 and again in 1947 ; and in the other groups the 1947 rates fell back to about the levels experienced in 1936-39. The C.M.I., as shown in Table LVIII, continued to decline, reaching 0·813 in 1947 for each sex; which indicates an improvement of 19 per cent. since 1938.

For **other forms of non-respiratory tuberculosis** the death rates in 1946 were lower than any previously recorded for each sex and age group in Table LVII, and further improvements occurred in 1947 for some of the groups. Table LVIII shows the downward trend of the C.M.I., distinguishing tuberculosis of the intestines and of bones from other varieties.

Distribution of Respiratory Tuberculosis by Regions and Counties.—Estimates of the civilian population by sex and age in each administrative area at the end of December, 1947,* were made by means of a count of the National Register at that date, and the rates in Tables LIX, LX and LXI are based upon those populations. The numbers of deaths from respiratory tuberculosis at ages under 5 and at 5–14 in a single year were comparatively small, totalling 259 and 180 respectively in the whole of England and Wales in 1947. For that reason the attempt to analyse death rates for a single year by sex and region at those ages is of doubtful value, but in order to make the regional analysis in Table LIX complete they have been included. Rates based upon less than 20 deaths (or notifications) are distinguished in each of the tables by italics as a reminder that they are subject to very large errors attributable to chance.

* Estimates of the Sex and Age Distribution of the Civilian Population in Regions and Administrative Areas of England and Wales, at December 31st, 1947. H.M.S.O., 1949, Price 2s. 6d.

For example, the death rate of 171 per million males at ages 0–4 in North I is based upon only 17 deaths, and has a standard error about 40. For the same reason, death rates at age groups over 15 in the single year cannot be compared usefully for separate counties which have small populations, and Table LX has therefore been confined to those geographical counties whose civilian populations at mid-1947 exceeded 250,000.

Table LIX.—Tuberculosis of Respiratory System : Mortality by Sex and Age per million living in Regions. 1947. (Non-civilians excluded)

Area	MALES (age l.b.d.)						FEMALES (age l.b.d.)					
	0–	5–	15–	25–	45–	65 and over	0–	5–	15–	25–	45–	65 and over
England and Wales ...	**75**	**21**	**438**	**649**	**1,104**	**647**	**68**	**43**	**721**	**569**	**257**	**191**
Regional Summary :												
South East	58	28	363	593	1,088	752	63	41	572	503	270	206
Greater London ...	83	*30*	388	614	1,189	993	82	50	634	534	291	205
Remainder	*26*	*25*	331	562	954	504	*39*	*31*	487	458	242	207
North	104	*15*	469	705	1,174	632	71	48	836	639	221	186
North I	*171*	*24*	677	927	1,119	501	*95*	*69*	1,231	849	215	*167*
North II	*33*	*30*	455	680	1,213	505	*35*	*31*	885	617	271	*187*
North III	*91*	*4*	349	599	1,017	665	*21*	*56*	708	542	231	119
North IV	101	*14*	452	693	1,276	689	99	*39*	741	628	208	228
Midland	94	*27*	432	655	1,151	557	87	38	786	551	301	171
Midland I	107	*30*	463	698	1,214	582	99	*48*	852	596	314	168
Midland II	*67*	*22*	372	568	1,031	511	*62*	*17*	655	459	275	177
East	*23*	—	303	514	737	437	*62*	*47*	542	468	200	161
South West	*33*	*27*	524	614	787	551	*34*	*14*	608	522	240	159
Wales	*38*	*11*	715	801	1,241	684	*59*	*64*	993	774	311	238
Wales I	*51*	*8*	710	824	1,211	741	*54*	*64*	1,125	814	330	263
Wales II	—	*20*	731	738	1,321	562	*74*	*62*	635	671	266	*193*
Density Summary :												
County Boroughs* ...	121	*22*	582	817	1,500	816	93	46	892	688	309	210
Other Urban Districts* ...	48	22	414	601	939	493	54	37	711	548	219	186
Rural Districts*	*36*	*12*	302	490	665	385	*37*	42	533	440	200	154

* Excluding Greater London

Table LX.—Tuberculosis of Respiratory System : Mortality by Sex at Ages 15 and over per million living in Counties (including County Boroughs) with populations exceeding 250,000. 1947. (Non-civilians excluded.)

	MALES				FEMALES			
	15–	25–	45–	65 and over	15–	25–	45–	65 and over
England and Wales ...	**438**	**649**	**1,104**	**647**	**721**	**569**	**257**	**191**
Bedfordshire	*128*	*384*	*521*	*302*	*549*	482	*137*	*221*
Berkshire	*265*	681	964	*315*	*575*	606	*369*	*151*
Buckinghamshire	*464*	500	734	*693*	*785*	372	*244*	*172*
Cheshire	*249*	641	986	652	471	486	122	*139*
Cornwall	*539*	720	994	*531*	*654*	*349*	*219*	*305*
Cumberland	*541*	582	1,202	*619*	1,126	674	*237*	*122*
Derbyshire	*215*	414	927	*406*	359	337	*193*	*159*
Devonshire	712	789	837	695	727	678	357	*177*
Dorsetshire	*303*	580	779	*324*	*564*	592	*81*	*46*
Durham	614	879	1,040	403	1,282	855	215	*213*
Essex	401	505	946	641	562	544	258	237
Gloucestershire	526	703	1,159	483	1,007	631	287	*116*
Hertfordshire	*231*	466	1,213	*522*	501	427	*205*	*139*
Kent	501	694	1,100	451	613	477	233	232
Lancashire	499	705	1,347	698	802	662	229	250
Leicestershire	*434*	622	1,181	*592*	820	564	531	*136*
Lincolnshire (Lindsey) ...	*519*	*603*	985	*524*	650	587	*207*	*183*
London	483	754	1,605	1,304	743	600	388	293
Middlesex	248	515	897	701	487	450	213	*117*
Norfolk	*184*	550	864	*614*	*321*	478	*138*	*241*
Northamptonshire ...	*228*	543	823	*431*	*315*	*323*	*196*	*255*
Northumberland	805	1,013	1,262	670	1,132	837	215	*93*
Nottinghamshire	562	702	1,177	648	1,002	535	201	*181*
Oxfordshire	*308*	501	*522*	*504*	*455*	519	*161*	*177*
Shropshire	*124*	536	693	*220*	*432*	510	*288*	*60*
Somersetshire	*509*	479	754	*455*	*505*	460	*165*	*138*
Southampton	394	734	1,117	595	566	504	282	*176*
Staffordshire	403	644	1,210	706	744	590	347	*177*
Suffolk, East	*430*	465	*297*	*403*	*582*	*419*	*154*	*135*
Surrey	*229*	409	775	761	476	382	200	*158*
Sussex, East	*375*	553	981	609	*189*	448	217	*161*
Sussex, West	*141*	*458*	929	*364*	*373*	625	*268*	*161*
Warwickshire	527	771	1,393	715	1,003	580	295	218
Wiltshire	*311*	*392*	540	*570*	*505*	384	*238*	*89*
Worcestershire	*546*	619	1,008	*312*	756	684	*307*	*130*
Yorkshire, E. Riding ...	*501*	785	1,293	*457*	822	653	333	*272*
Yorkshire, N. Riding ...	*421*	669	1,263	*476*	929	548	*220*	*169*
Yorkshire, W. Riding ...	349	599	1,017	665	708	542	231	119
Glamorganshire	805	884	1,287	757	1,231	857	299	*278*
Monmouthshire	*555*	754	1,063	*662*	970	750	*366*	*285*

The rates in these tables can best be considered in conjunction with the notification rates. For many years *notifications* of respiratory tuberculosis have not been dealt with in the Registrar General's Reports, mainly because of the difficulties which arose, in the case of a disease of long duration, from multiple notifications of people who move from one locality to another and come under a different health authority. Annual returns have been submitted to the Ministry of Health by Tuberculosis Authorities, in accordance with the Public Health (Tuberculosis) Regulations, 1912–30, for years 1913 onwards, and numbers of formal notifications in England and Wales as a whole, by sex at four age groups 0—, 15—, 25—, 45 and over, have been published in Reports of the Chief Medical Officer of the Ministry of Health*. In recent years these have excluded duplicate notifications and transfers between areas, in so far as they could be ascertained, and also any cases brought to the notice of Medical

* Appendix B, Table XV of those Reports.

Officers of Health otherwise than by formal notification. It is considered that the errors arising from transfers and duplication have been so far reduced as not to invalidate the figures to a serious degree, though some transfers of patients formally notified in the same year are known to be included despite efforts to eliminate them. In the years 1938–44 between 3,400 and 4,200 transfers between areas were excluded, but in subsequent years the number so excluded has increased to over 5,000 annually.

It is fully recognised that, as in the case of other infectious diseases, notification is incomplete for various reasons. Since 1929 returns have been made of the deaths of tuberculous persons who had not been notified as tuberculous in so far as that could be ascertained by local enquiries. Totals of such deaths have been published alongside the formal notifications, and in the years 1938–39 the annual number for respiratory tuberculosis averaged 1,836 compared with 36,405 formal notifications. In the years 1940–46 the mean annual number of formal notifications was 40,974, and of deaths of unnotified persons 2,492, the latter figure being 11·7 per cent. of all deaths from respiratory tuberculosis and 6·1 per cent. of the notifications. It is believed that many of those escaping notification before being certified as dying from the disease are old people, and returns of the ages of these decedents will in future be available.

The criterion for notification is that the person is "suffering from" the disease, and on that basis of definition it has been estimated that perhaps ten per cent. of fully established cases are now escaping notification*. Assuming that to be so for England and Wales as a whole, there may still be wide variation in the proportion from county to county, arising from differences in interpretation of the definition and in enthusiasm for notification on the part of those responsible for tuberculosis control. In counties consisting of a considerable number of independent units for the exercise of such control the effect of such differences on the rate for the complete county might be expected to be small through the averaging of personal equations, whereas in small counties under a single tuberculosis administration it might be large. Such differences would not affect the death rate, however, to anything like the same extent. The effects of local differences in completeness of notification may also be more important at one age period than another.

In 1946 and 1947 formal notifications of respiratory tuberculosis in England and Wales numbered 42,173 and 43,159, distributed by sex and age as follows :—

		0–	5–	15–	25–	45–	65 and over	All ages
Males... ...	1946	543	1,283	5,581	9,837	6,269	1,016	24,529
	1947	724	1,493	5,864	9,193	6,335	1,064	24,673
Females ...	1946	442	1,327	6,648	6,921	1,886	420	17,644
	1947	570	1,408	7,043	7,119	1,891	455	18,486

The deaths of tuberculous persons not notified before death numbered 2,436 in 1946 and 2,615 in 1947.

Table LXI shows the distribution in each region and county of the notifications in 1947, per 100,000 living at the end of 1947, at six age periods. At ages 15–24 and 25–44 the agreement between the regional rankings according to the notification rates at the two age periods is close, the coefficients of rank correlation being 0·88 for males and 0·82 for females ; whilst between the sexes

* Sickness in the Population of England and Wales in 1944–47. Studies on Medical and Population Subjects, No. 2. General Register Office, 1949. H.M.S.O. 1s. net.

the coefficients are 0·79 at ages 15–24 and 0·74 at 25–44. It is justifiable, therefore, to obtain an equivalent average notification rate at 15–44 by adding the sum of the male and female rates at 15–24 to twice the sum of the male and female rates at 25–44 and dividing by six. These are, in effect, standardized rates at 15–44 based on a population uniformly distributed by age and equally divided between the sexes.

Table LXI.—Tuberculosis of Respiratory System : Notifications by Sex and Age per 100,000 living in Regions and Counties (including associated County Boroughs), 1947. (non-civilians are excluded).

	MALES						FEMALES					
	0–	5–	15–	25–	45–	65 and over	0–	5–	15–	25–	45–	65 and over
England and Wales ...	**39**	**52**	**258**	**145**	**137**	**55**	**32**	**51**	**240**	**106**	**35**	**17**
Regional Summary :												
South East	45	60	306	168	151	67	38	59	259	115	36	17
North	42	44	224	131	138	51	33	47	224	97	33	17
North I	69	72	285	152	152	42	60	70	299	120	42	18
North II	*25*	43	183	110	123	*29*	*26*	45	227	99	38	*12*
North III	49	46	184	117	109	55	34	47	181	79	27	15
North IV	32	33	230	135	154	58	24	39	217	99	33	19
Midland	37	52	238	128	136	52	32	51	235	98	38	18
Midland I	42	55	244	134	152	56	34	46	233	98	41	18
Midland II	25	46	226	116	108	45	28	61	240	98	31	17
East	*20*	37	184	113	92	36	*18*	36	163	82	31	*13*
South West	*12*	44	257	157	92	32	*13*	39	200	109	28	17
Wales	36	71	315	155	120	59	25	53	328	143	38	14
Wales I	36	77	317	149	119	60	30	59	338	151	36	*16*
Wales II	*35*	56	310	172	125	59	*11*	*37*	303	121	44	*12*
Bedfordshire	*23*	*35*	205	143	95	*45*	*49*	*51*	175	113	*16*	*17*
Berkshire	*6*	*25*	340	151	174	*42*	*38*	*38*	244	115	51	*15*
Buckinghamshire ...	*39*	*27*	134	111	86	*58*	*14*	*17*	223	68	*35*	*21*
Cambridgeshire	*30*	*32*	*93*	89	*57*	*35*	*48*	*33*	*134*	91	*39*	—
Cheshire	*23*	*14*	206	112	118	38	*21*	26	172	80	17	*16*
Cornwall	—	*9*	198	111	62	*21*	—	*5*	131	49	*26*	*27*
Cumberland	*17*	*60*	132	114	100	*54*	*27*	*74*	302	90	*30*	*24*
Derbyshire	*11*	*20*	116	92	99	*30*	*17*	*28*	167	67	22	*20*
Devonshire	*10*	*39*	293	148	73	*39*	*10*	*40*	174	117	21	*22*
Dorsetshire	—	*31*	258	157	95	*26*	*9*	*39*	175	101	*24*	—
Durham	72	60	255	148	156	42	59	73	304	119	42	*20*
Ely, I. of	—	*16*	*72*	*69*	*52*	*43*	—	—	*31*	*24*	*20*	—
Essex	44	57	243	158	143	43	37	42	219	103	36	*16*
Gloucestershire	*12*	52	320	155	132	*46*	*23*	*31*	278	120	39	*12*
Herefordshire	*19*	*45*	*245*	123	*108*	*44*	*20*	*116*	*204*	121	*53*	*47*
Hertfordshire	*37*	*34*	237	141	126	*72*	*17*	*41*	178	85	*26*	*6*
Huntingdonshire ...	—	*46*	*135*	*96*	*61*	*30*	—	*48*	*311*	*88*	*14*	—
Kent	42	51	307	158	135	33	35	51	231	96	30	*17*
Lancashire	34	38	235	140	163	63	25	42	228	104	36	20
Leicestershire	*36*	64	269	116	124	*41*	*27*	84	251	108	40	*16*
Lincolnshire (Holland) ...	—	—	*229*	*88*	*38*	—	—	*14*	*118*	*14*	*37*	*17*
Lincolnshire (Kesteven)	*19*	—	*175*	*56*	*55*	*16*	—	—	*108*	*46*	*15*	*13*
Lincolnshire (Lindsey) ...	*34*	97	252	149	127	*44*	*36*	84	270	110	*23*	*7*
London	79	103	389	209	226	128	74	98	358	162	49	24
Middlesex	60	73	348	159	126	80	41	71	309	118	31	*12*
Norfolk	*31*	*22*	180	135	113	*44*	*14*	*15*	134	94	31	*16*
Northamptonshire ...	*6*	*26*	205	120	77	*38*	*13*	*23*	230	74	50	*17*
Northumberland ...	65	95	346	159	144	*42*	62	64	290	123	42	*16*
Nottinghamshire ...	*38*	67	320	133	123	71	*45*	90	313	129	30	*14*
Oxfordshire	*27*	*50*	185	113	127	*42*	*9*	*65*	218	89	*29*	*12*
Peterborough, Soke of ...	*41*	*25*	*92*	*173*	*29*	*36*	*43*	*80*	*185*	*128*	—	*54*
Rutlandshire	—	—	*393*	—	—	—	—	*146*	—	*37*	—	*75*
Shropshire	—	*19*	136	102	80	*22*	*18*	*5*	151	69	*35*	*18*
Somersetshire	*23*	63	302	212	139	*46*	*24*	*53*	278	149	44	*16*
Southampton	*12*	54	326	211	145	36	*2*	56	225	99	39	*21*

Table LXI—(*contd.*)

	MALES						FEMALES					
	0–	5–	15–	25–	45–	65 and over	0–	5–	15–	25–	45–	65 and over
Staffordshire	48	66	203	138	158	67	35	55	231	88	51	28
Suffolk East	—	*18*	166	105	83	*29*	*15*	*19*	107	71	*41*	*23*
Suffolk West	—	*13*	*228*	*70*	*81*	*44*	—	*42*	*220*	*75*	*59*	*12*
Surrey	*25*	32	323	137	127	55	*20*	39	198	91	26	*15*
Sussex East	*22*	*31*	180	162	138	*39*	*14*	*27*	143	98	31	*14*
Sussex West	—	*24*	*126*	121	67	*42*	*17*	*40*	128	51	*20*	*19*
Warwickshire	60	56	289	133	175	70	45	53	242	100	39	*16*
Westmorland	—	*21*	*347*	*81*	*43*	—	—	*22*	*108*	*83*	*11*	—
Wight, I. of	—	*86*	*168*	*140*	*80*	—	*55*	*71*	*123*	*87*	*69*	*23*
Wiltshire	*20*	*66*	171	132	90	*6*	*14*	*45*	219	94	*24*	*9*
Worcestershire	*35*	*38*	153	102	136	*22*	*18*	*20*	174	90	*23*	*7*
Yorkshire E. Riding	*39*	*22*	208	121	170	*32*	*36*	*17*	221	84	52	*14*
Yorkshire N. Riding	*18*	56	168	101	101	*17*	*19*	61	208	120	*32*	*7*
Yorkshire W. Riding	49	46	184	117	109	55	34	47	181	79	27	15
Anglesey	*50*	*59*	*317*	*273*	*117*	*34*	—	—	*494*	*116*	*31*	—
Brecknockshire	*90*	*102*	*185*	*65*	*16*	*34*	*47*	*109*	*213*	*77*	*30*	—
Caernarvonshire	—	*24*	545	235	189	*172*	*70*	*50*	444	119	*46*	—
Cardiganshire	—	*61*	*125*	*119*	*67*	—	—	—	*179*	*40*	*26*	*22*
Carmarthenshire	*16*	*79*	253	170	118	*36*	*16*	*37*	311	163	*41*	*10*
Denbighshire	*106*	*76*	265	144	123	*35*	—	*63*	254	135	*37*	*17*
Flintshire	*17*	*82*	*238*	138	*123*	*30*	—	*61*	*182*	*85*	*30*	*22*
Glamorganshire	40	87	354	155	127	64	*40*	67	367	156	35	*21*
Merionethshire	*69*	*36*	*363*	*190*	*230*	*133*	—	*40*	*439*	*302*	*55*	—
Monmouthshire	*27*	*46*	262	133	108	*61*	*6*	*41*	281	140	*35*	*5*
Montgomeryshire	—	*94*	*313*	*252*	*19*	—	—	—	*164*	*250*	*143*	—
Pembrokeshire	—	*17*	*279*	*96*	*84*	*23*	—	—	441	*95*	*48*	*19*
Radnorshire	—	—	*162*	*168*	*138*	*78*	—	—	—	—	—	—

In the table below, the value of this E.A.N.R. for each region is shown in the first column ; and in the next columns are given the ratios of deaths per hundred notifications at each age group of adults.

Region	E.A.N.R. 15–44	Ratio of Deaths per 100 Notifications							
		MALES				FEMALES			
		15–	25–	45–	65 and over	15–	25–	45–	65 and over
North I	188	24	61	74	120	41	71	51	90
North II	138	25	62	98	172	39	63	72	150
North III	126	19	51	94	121	39	69	85	78
North IV	153	20	51	83	119	34	63	64	119
Midland I	157	19	52	80	104	37	61	76	92
Midland II	149	16	49	96	113	27	47	89	100
East	123	17	46	80	121	33	57	64	124
South East	189	12	35	72	113	22	44	76	118
South West	165	20	39	85	174	30	48	86	93
Wales I	209	22	55	102	124	33	54	92	167
Wales II	200	24	43	106	96	21	55	61	167
England and Wales	**167**	**17**	**45**	**81**	**118**	**30**	**54**	**74**	**112**

If the completeness of notification were uniform throughout the country and if conditions which favour high prevalence of respiratory tuberculosis amongst young adults are also generally productive of a high fatality amongst them, it would be expected that those regions having high notification rates would also show high ratios of deaths to notifications at ages 15–44, and that the rankings would be positively correlated. If on the other hand completeness of notification differs greatly from region to region, poor notification would produce a fictitious increase in the fatality ratio with resulting negative correlation between notification rate and the ratios of deaths to notifications. There are, however, several disturbing factors, for example, the harder climate of the north might increase fatality without affecting prevalence, and owing to differing racial susceptibilities English and Welsh people might be liable to different fatalities even with similar environments.

Comparing first the four northern regions, the equivalent average notification and death rates per 100,000 at ages 15–44 were :—

	North I	*North II*	*North III*	*North IV*
E.A.N.R. at 15–44 ...	188	138	126	153
E.A.D.R. at 15–44 ...	91	66	56	64
Ratio per cent. ...	48	48	44	42

In the most northerly regions, North I and II, the ratio of death to notification rates was 48 per cent. ; and in the regions not quite so far north, it was rather less. The low death rate of young adults in North III, the West Riding and York, has been remarked upon before, and it is now seen to arise from a low incidence rather than from a low fatality of the disease.

Comparing the other English regions, the equivalent average rates per 100,000 at ages 15–44 were :—

	South East	*South West*	*Midland I*	*Midland II*	*East*
E.A.N.R. at 15–44 ...	189	165	157	149	123
E.A.D.R. at 15–44 ...	52	57	65	51	47
Ratio per cent. ...	28	35	41	34	38

In the South East, which includes Greater London, a low ratio of deaths to notifications is to be expected ; but there was probably also exceptionally complete, or even excessive, notification in the London area, tending to make the ratio still lower. In Midland I the notification rates at ages 15–44 were higher than in Midland II for males of all age groups but not for young females, whilst the death rates were higher for both sexes, suggesting some deficiency in notification of young women. The figures for the East, which is mainly rural, also suggest that notification may be defective there.

The Welsh regions showed higher notification rates than any region in England at ages 15–24 for each sex and at 25–44 for females, and this applied also to males aged 25–44 in Wales II. At ages over 45 the rates were not high.

Males aged 45–64 gave high notification rates in North IV, North I, Midland I and the South East, and low rates in the East, South West and Midland II. For females of that age group the highest rates were in Wales II, North I, and Midland I, and the lowest in North III and the South West. The rank correlation coefficient between males and females of this age was 0·66.

The increase in ratio of deaths to notifications as age advances does not necessarily indicate diminishing completeness of notification, since the disease is often a chronic one and many of the deaths occurring are of people who were notified some years before when in a lower age group. Nevertheless, there is no doubt that notification is less complete at ages over 65 than in younger people, and that this partly accounts for the percentage ratio of deaths to notifications exceeding 100 at those ages. Since the notifications at ages over 65 numbered about 1,500 and the total deaths of tuberculous persons not notified before death were 2,615 at all ages, of which possibly 1,500 were deaths at ages over 65, the degree of non-notification at these ages might be as high as one-half. Even so, the absence of these can reduce the total notifications at all ages by no more than $3\frac{1}{2}$ per cent.

The order of ranking of the regions according to notification rates at 65 and over was quite different for males and females ; and for females it had no correlation with the ranking by death rates. For males, however, death and notification rates were closely related, the coefficient of rank correlation being 0·84. Furthermore, the ranking by female notification rates at 65 and over had no correspondence with that at 45–64, whereas for males there was a small coefficient of rank correlation of 0·46. It would appear that for females over 65 the variation in notification rate between regions indicated nothing more than varying completeness of notification and chance variations due to the small numbers. The regions with lowest notification rates for this group were North II, East, Wales and North III, and the first three of these also gave high ratios of deaths to notifications, as shown by the table above.

Table LXII.—Tuberculosis of Respiratory System. Ages 15-44. Numbers of Notifications and Deaths, Equivalent Average Rates per 100,000 living and Ratios of Deaths to Notifications, in Counties with and without County Boroughs, 1947.

Counties (in order of Notification rate at 15–44)	Notification rate, E.A.N.R. 15–44	No. of notifications				No. of Deaths		Death rate, E.A.D.R. 15–44	Deaths per 100 Notifications 15–44
		Males		Females		Males	Females		
		15–	25–44	15–	25–44	15–44	15–44		
English counties without county boroughs									
Middlesex	202	379	576	463	467	214	251	44·4	25
Dorsetshire	158	34	54	31	41	24	34	53·5	36
Herefordshire	156	17	20	18	21	18	11	58·9	38
Bedfordshire	149	32	67	35	54	20	34	40·2	29
Peterborough, Soke of	147	3	16	8	12	4	7	39·4	28
Hertfordshire	145	72	126	71	82	47	61	41·3	31
Wiltshire	140	33	64	52	49	25	32	39·5	29
Huntingdonshire	136	5	9	13	8	1	9	37·7	29
Westmorland	131	13	7	5	8	3	6	32·4	27
Wight, Isle of	124	7	17	7	12	10	5	39·7	35
Suffolk West	123	14	11	16	12	5	11	35·0	30
Buckinghamshire	119	26	62	54	40	37	41	49·9	43
Cornwall	108	33	48	28	24	40	31	55·5	53
Shropshire	105	22	40	28	27	23	28	44·1	44
Sussex West	100	18	45	24	23	19	35	44·7	49
Cambridgeshire	98	13	22	16	23	12	15	36·2	36
Lincolnshire, Holland	92	14	13	9	2	15	10	57·9	66
Lincolnshire, Kesteven	81	12	10	9	8	12	12	46·3	62
Rutlandshire	78	5	—	—	1	1	2	37·8	—
Ely, Isle of	48	4	9	2	3	7	9	43·0	—
English counties with county boroughs									
Northern									
Northumberland	200	159	187	164	149	156	165	94·0	49
Durham	182	237	312	337	251	242	323	89·4	50
Lancashire	159	617	1,037	792	828	652	805	67·3	45
Cumberland	140	22	45	59	36	32	49	69·7	50
Yorkshire E. Riding	140	58	88	78	63	71	78	70·0	52
Yorkshire N. Riding	136	48	71	74	88	59	73	63·1	47
Cheshire	127	124	198	135	154	128	131	49·6	42
Yorkshire W. Riding	126	348	625	431	435	386	468	55·7	46
Other									
London	248	668	1,141	882	929	495	527	65·6	28
Somersetshire	217	83	155	99	120	49	55	48·2	23
Southampton	195	174	305	167	169	127	128	57·3	31
Nottinghamshire	193	148	167	178	164	114	125	67·3	36
Gloucestershire	191	158	212	177	169	122	153	70·0	38
Berkshire	186	77	84	68	70	44	53	56·9	32
Kent	174	221	334	230	225	183	173	57·6	35
Lincolnshire, Lindsey	173	63	99	83	73	53	59	59·2	35
Devonshire	166	111	144	86	133	104	113	72·9	46
Warwickshire	166	269	398	294	299	279	295	70·6	46
Essex	164	249	474	297	323	193	246	51·0	33
Surrey	163	240	315	204	239	111	149	38·1	26
Leicestershire	161	93	108	107	103	73	89	60·4	39
Staffordshire	148	186	345	264	218	198	232	60·3	42
Sussex East	141	48	120	53	88	51	47	42·8	32
Northamptonshire	137	36	62	51	39	32	24	37·9	30
Oxfordshire	135	36	45	43	36	26	30	46·7	35
Norfolk	129	49	98	46	71	45	47	42·7	35
Worcestershire	119	42	79	62	71	63	81	65·1	57
Suffolk East	104	27	45	22	32	27	31	46·3	46
Derbyshire	100	54	115	93	83	62	62	34·6	36
Welsh counties									
Merionethshire	298	8	9	11	16	10	7	116·7	39
Caernarvonshire	283	37	42	37	22	17	15	65·9	24
Anglesey	265	8	17	15	8	11	11	119·1	46
Montgomeryshire	247	9	16	5	15	3	7	55·0	22
Glamorganshire	224	242	268	307	281	208	257	92·0	42
Carmarthenshire	205	26	43	36	43	24	28	70·3	35
Pembrokeshire	184	14	12	25	12	10	15	71·4	40
Monmouthshire	182	66	83	84	86	61	75	75·6	43
Denbighshire	180	24	34	27	34	19	16	52·2	29
Flintshire	144	17	27	17	18	18	22	67·3	51
Brecknockshire	114	6	5	8	6	4	9	58·0	52
Cardiganshire	104	4	8	6	3	10	8	87·0	—
Radnorshire	83	2	5	—	—	4	—	44·8	—

Table LXII gives for males and females the notifications at two age groups 15–24 and 25–44, and the deaths at 15–44, in each complete county. The counties are arranged in four groups, English counties without county boroughs and therefore under a single administration for tuberculosis, northern English counties containing county boroughs, other English counties with county or metropolitan boroughs, and all counties of Wales. Within each group the counties are arranged in order of diminishing equivalent average notification rates at ages 15–44, as shown in the first column ; and in the last two columns are the equivalent average death rates per 100,000 living, and percentage ratios of deaths to notifications at the same ages.

The twenty English counties without county boroughs show little or no relation between notification and death rates at ages 15–44, the average E.A.D.R. for the first ten being 42·7 and for the last ten 45·0. This suggests that some of the counties had low notification rates because notification was less complete than elsewhere, and taking into consideration the situation of the counties, the ratios of deaths to notifications suggest that this may have been the case in Buckinghamshire, Cornwall, Sussex West and the Holland and Kesteven divisions of Lincolnshire. In the case of Cornwall, Devon, Dorset, Isle of Wight and Sussex, however, unduly high ratios of deaths to notifications might arise from movement of tuberculous people into those counties for climatic reasons. On the assumption that in all other counties of this group the true ratio of notifiable cases to deaths was 4 to 1, the 3,778 notifications in the whole group at ages 15–44 understated the notifiable cases by some 600.

In the eight northern counties with county boroughs there was a fairly close correspondence between notification and death rates, the ratio of deaths to notifications ranging from 42 to 52 per 100, and the order of ranking of the E.A.N.R. and E.A.D.R. being almost identical. Considering their rural character, the ratios of deaths to notifications in the East Riding and Cumberland suggest that in those counties, and possibly in the North Riding, notification may have been deficient. It has been conjectured that the ratio between deaths and notifiable cases in industrial areas of the north would be found to be greater than in the south of England, and this conjecture is now shown to have been correct. For various reasons, such as young adults moving into the London area from rural counties developing tuberculosis and being notified and then returning to their home counties, together with a greater tendency to notify doubtful cases of infectious diseases, the notification rates of London and Middlesex need to be reduced for proper comparison with the northern counties. Allowing 20 per cent. reduction in the London notifications and 15 per cent. in Middlesex, the ratio of notifications to deaths at ages 15–44 would still be 3 to 1 in the London area contrasted with 2 to 1 in the most northerly counties.

Amongst the 21 other English counties with county boroughs Somerset gave a remarkably low ratio of deaths to notifications (23 per cent.) ; Gloucestershire, Nottinghamshire and London had high rates both for notifications and deaths ; and Derbyshire, Northamptonshire, Norfolk, Suffolk East, Sussex East and Oxfordshire had low rates for both. The midland industrial counties of Stafford and Warwick, with medium notification rates, gave ratios of deaths to notifications of 42 and 46 per cent., similar to those of Cheshire and Lancashire. In Worcestershire and Suffolk East the ratios of 57 and 46 per cent. suggest that notification was less complete than elsewhere.

In Wales the county of Glamorgan, with a ratio of deaths to notifications 42 per cent. as in Staffordshire, had high rates for both, and this was also the case for Merionethshire and Anglesey.

Table LXIII.—Tuberculosis of Respiratory System : Ages 45-64 and 65 and over. Numbers of Notifications and Deaths.

Counties (in order of Male Notification rates at 45–64)	MALES							FEMALES			
	Population at end of 1947	No. of Notifications		No. of Deaths		Rate per 100,000 at 45–64		No. of Notifications		No. of Deaths	
	45–64	45–	65 and over	45–	65 and over	Notns.	Deaths	45–	65 and over	45–	65 and over
English Counties without County Boroughs											
Middlesex	251,999	317	67	226	59	126	90	92	16	63	15
Hertfordshire	61,841	78	18	75	13	126	121	19	2	15	5
Herefordshire	12,964	14	3	14	2	108	108	8	4	7	2
Bedfordshire	32,653	31	6	17	4	95	52	6	3	5	4
Dorsetshire	29,542	28	4	23	5	95	64	9	—	3	1
Wiltshire	38,923	35	1	21	10	90		10	2	10	2
Buckinghamshire ...	39,502	34	10	29	12	86	73	16	5	11	4
Suffolk West	12,405	10	3	6	3	81	48	8	1	3	2
Shropshire	28,865	23	3	20	3	80	69	11	3	9	1
Wight, Isle of	9,960	8	—	14	6	80	141	9	2	6	5
Sussex West	31,226	21	8	29	7	67	93	9	6	12	5
Cornwall	37,222	23	4	37	10	62	99	12	7	10	8
Huntingdonshire ...	6,555	4	1	1	1	61		1	—	—	—
Cambridgeshire ...	17,482	10	3	17	1	57		8	—	6	1
Lincolnshire, Kesteven	12,773	7	1	11	2	55	73	2	1	5	—
Ely, Isle of	9,669	5	2	5	1	52		2	—	4	—
Westmorland	6,991	3	—	2	2	43		1	—	3	—
Lincolnshire, Holland ...	10,413	4	—	6	1	38		4	1	2	1
Peterborough, Soke of	6,780	2	1	2	—	29	52	—	2	1	1
Rutlandshire	1,922	—	—	2	—	—		—	1	1	—
English Counties with County Boroughs											
Northern											
Yorkshire E. Riding ...	51,814	88	7	67	10	170	129	31	4	20	8
Lancashire	552,925	900	135	745	150	163	135	246	61	155	77
Durham	153,897	240	26	160	25	156	104	71	14	36	15
Northumberland ...	85,602	123	15	108	24	144	126	41	7	21	4
Cheshire	136,896	161	21	135	36	118	99	28	13	20	11
Yorkshire W. Riding ...	399,293	434	86	406	104	109	102	126	32	107	25
Yorkshire N. Riding ...	51,447	52	4	65	11	101	126	19	2	13	5
Cumberland	29,940	30	7	36	8	100	120	10	4	8	2
Other											
London	350,262	790	183	562	186	226	160	212	51	169	63
Warwickshire	190,988	334	49	266	50	175	139	84	15	64	21
Berkshire	41,497	72	8	40	6	174	96	25	4	18	4
Staffordshire	163,658	258	42	198	44	158	121	93	22	63	14
Southampton	117,276	170	20	131	33	145	112	56	17	40	14
Essex	211,395	302	37	200	55	143	95	88	19	64	28
Somersetshire	59,690	83	13	45	13	139	75	32	7	12	6
Sussex East	63,179	87	14	62	22	138	98	29	9	20	10
Worcestershire	54,577	74	5	55	7	136	101	14	2	19	4
Kent	162,785	220	24	179	33	135	110	57	18	45	24
Gloucestershire ...	97,479	129	19	113	20	132	116	45	7	33	7
Lincolnshire, Lindsey	48,727	62	10	48	12	127	99	12	2	11	5
Oxfordshire	26,810	34	5	14	6	127	52	9	2	5	3
Surrey	174,173	221	38	135	53	127	78	56	16	43	17
Leicestershire	66,878	83	11	79	16	124	118	32	6	42	5
Nottinghamshire ...	87,499	108	24	103	22	123	118	30	6	20	8
Norfolk	56,699	64	13	49	18	113	86	20	6	9	9
Derbyshire	90,648	90	11	84	15	99	93	22	9	19	7
Suffolk East	33,655	28	5	10	7	83	30	16	5	6	3
Northamptonshire ...	40,081	31	7	33	8	77	82	18	4	9	6
Devonshire	86,065	63	17	72	30	73	84	22	14	38	11
Welsh Counties											
Merionethshire	4,351	10	3	14	5	230	204	3	—	2	—
Caernarvonshire ...	13,787	26	12	23	7	189		8	—	5	2
Radnorshire	2,167	3	1	2	1	138		—	—	—	—
Glamorganshire ...	134,400	171	34	173	40	127	129	51	13	43	17
Denbighshire	18,726	23	3	20	3	123	123	8	2	5	4
Flintshire	14,595	18	2	21	2	123		5	2	4	2
Carmarthenshire ...	20,394	24	3	27	8	118	132	9	1	11	2
Anglesey	5,127	6	1	8	—	117		2	—	2	—
Monmouthshire... ...	47,983	52	12	51	13	108	106	17	1	18	6
Pembrokeshire	9,539	8	1	9	2	84	84	5	1	2	—
Cardiganshire	5,995	4	—	4	1	67		2	1	3	—
Montgomeryshire ...	5,223	1	—	4	1	19		82	—	2	2
Brecknockshire ...	6,191	1	1	2	1	16			—	1	—

Table LXIII shows the numbers of notifications and of deaths at ages 45–64, 65 and over, in the counties, grouped in a similar way and ranked within each group in order of diminishing notification rates of males at ages 45–64. Death rates of males aged 45–64 are shown, combining some neighbouring counties where the numbers were small. To complete the record of notifications and deaths in the year, those of females are given in the final columns.

As might be expected, there is little correspondence between notification and death rates of males aged 45–64 amongst the counties without county boroughs. The ranking of these counties according to notification rates closely resembled their ranking by young adult rates in Table LXII; ignoring Peterborough and Westmorland with their small populations, the first six and the last five counties were the same in the two tables. Middlesex gave highest notification rates in both series, but the notification and death rates for males 45–64 were in each instance only 56 per cent. of those in London, whereas for young adults the ratios were 81 and 68 per cent. Comparison with death rates suggests that in some of the counties notification rates were unduly low through deficient notification; but assuming that no county had a true rate less than 80 per 100,000 the missed notifications of males aged 45–64 in the whole group would amount to only 34.

In the northern counties with county boroughs notification rates of men of those ages were no higher than in other counties with county boroughs. Comparison with Table LXII shows that Northumberland and Durham no longer ranked first in this group, being displaced by the East Riding and Lancashire, which also had the highest death rates.

London had the highest notification rate of any English county, as was the case for young adults; and it was also distinguished by death rates amongst males over 45 unequalled anywhere except in North Wales. The excessive death rates in London men and women over 45 when compared with those in Lancashire, Durham, Northumberland and Warwickshire are in remarkable contrast with the position for young adults, as shown below :—

	Rates in terms of London taken as 100									
	Death rates, Males				Death rates, Females				Notification rates	
	15–	25–	45–	65 and over	15–	25–	45–	65 and over	E.A.N.R. 15–44	Males 45–64
Lancashire ...	103	94	84	54	108	110	59	85	64	72
Durham ...	127	117	65	31	173	143	55	73	73	69
Northumberland	167	134	79	51	152	140	55	32	81	64
Warwickshire ...	109	102	87	55	135	97	76	74	67	77

The contrast was even greater amongst women than men and the facile explanation of more accurate death certification can scarcely account for it. It must be noted that this excess of London mortality at ages over 45 is not a new phenomenon; in 1937, for example, the death rates in North region exceeded those in London only at ages 5–24 amongst males, giving place to ratios of about 75 per cent. at 45–64 and 57 per cent. after 65, whilst for females also London had higher rates than the North at ages after 55.

In 1947 males aged 45–64 in Warwickshire gave higher rates of notification and of deaths than in any of the northern counties; and Staffordshire and

Essex also ranked higher amongst the counties for men of this age than for young adults. In the Welsh counties the ranking according to notifications was similar to that for deaths, and did not differ greatly from the ranking in Table LXII according to notification rates for young adults.

Table LXIV.—Tuberculosis of the Meninges and Central Nervous System and other Non-Respiratory Tuberculosis: Death rates by Sex and Age per million living in Regions. 1947.

Area	Tuberculous Meningitis						Other Non-Respiratory Tuberculosis					
	Males			Females			Males			Females		
	0–	5–	15 and over	0–	5–	15 and over	0–	5–	15 and over	0–	5–	15 and over
England and Wales ...	**211**	**68**	**13**	**180**	**66**	**14**	**90**	**29**	**45**	**64**	**27**	**38**
Regional Summary:												
South East	121	50	10	126	49	11	48	*16*	42	39	*20*	37
Greater London ...	112	67	12	112	54	10	*49*	*14*	41	*27*	*21*	39
Remainder	133	*32*	*8*	143	*43*	13	*48*	*18*	42	*54*	*19*	35
North	311	88	14	262	75	14	112	38	45	73	36	37
North I	453	128	*22*	360	144	23	*111*	*37*	58	*95*	*31*	42
North II	*284*	*102*	*11*	*317*	*42*	*19*	*167*	*61*	*36*	*70*	*63*	45
North III	359	*80*	*9*	206	*48*	*11*	*124*	*29*	40	*82*	*30*	38
North IV	236	74	14	244	70	11	94	*38*	45	*59*	*34*	33
Midland	204	71	15	136	74	16	116	*33*	41	84	*19*	40
Midland I	222	81	14	160	71	15	111	*35*	36	91	*17*	39
Midland II	167	*50*	*16*	*88*	*81*	18	*125*	*28*	51	*70*	*23*	42
East	*211*	*30*	10	*148*	*62*	*20*	*70*	*45*	41	*37*	*23*	26
South West	*163*	*60*	15	*171*	*70*	24	*98*	*40*	55	*91*	*28*	41
Wales	254	*78*	23	227	*81*	*16*	*132*	*17*	66	*89*	*46*	49
Wales I	*206*	*85*	*24*	*257*	*104*	*21*	*116*	*15*	61	*81*	*48*	47
Wales II	*384*	*60*	*19*	*147*	*21*	*3*	*175*	*20*	78	*110*	*42*	*54*
Density Summary:												
County Boroughs* ...	258	78	14	226	79	16	119	38	46	86	33	40
Other Urban Districts* ...	244	73	16	190	64	15	88	29	43	58	32	35
Rural Districts*	175	43	9	153	59	16	86	*28*	49	75	*15*	38

* Excluding Greater London.

Distribution of Non-Respiratory Tuberculosis by Regions and Counties.

Table LXIV shows the death rates at ages under 5, 5–14, 15 and over, from tuberculosis of the meninges and nervous system, and from other non-respiratory tuberculosis, in each region and density aggregate in 1947. Amongst children the meningitis rates were from 35 to 80 per cent. greater in the county boroughs than in the rural districts; and for other non-respiratory tuberculosis there was a similar excess, though not quite so pronounced. Greater London, on the other hand, had very low rates for children. There was a large northern excess in meningitis mortality at ages under 5 and a smaller excess at 5–14, whilst for other non-respiratory tuberculosis the excess was relatively greater at the school ages.

The numbers of deaths in separate counties in a single year are generally small, but in Table LXV equivalent average death rates at ages 0–14 are given, these being the death rates per million in a population consisting of equal numbers of boys and girls aged 0–4 and twice those numbers at ages 5–14. Disregarding the counties with very small populations, Durham and Northumberland gave the highest meningitis rates, followed by Bedfordshire, Monmouthshire, East and North Ridings, Lindsey, Glamorganshire and Nottinghamshire, whilst Cambridgeshire, Berkshire, Kesteven, West Suffolk, Herefordshire, Hertfordshire, Oxfordshire and Northamptonshire had rates of 50 or less,

Table LXV.—Tuberculosis of the Meninges and Central Nervous System and Other Non-Respiratory Tuberculosis. Equivalent Average Death Rates per million living at Ages 0-14 in Counties (including associated County Boroughs). 1947.

English counties without county boroughs	E.A.D.R. 0–14	
	Menin-gitis	Other
Bedfordshire	166	*43*
Buckinghamshire	*59*	*12*
Cambridgeshire	*25*	*25*
Cornwall	*68*	*70*
Dorsetshire	*65*	*113*
Ely, Isle of	*100*	*54*
Herefordshire	*75*	*37*
Hertfordshire	*46*	*7*
Huntingdonshire	*142*	—
Lincolnshire: Holland	*238*	—
Lincolnshire: Kesteven	*31*	*62*
Peterborough, Soke of	—	—
Rutlandshire	*201*	*211*
Shropshire	*133*	*91*
Suffolk West	—	—
Sussex West	*59*	*43*
Westmorland	*201*	—
Wight, Isle of	*104*	*46*
Wiltshire	*52*	*36*

English counties with county boroughs	E.A.D.R. 0–14	
	Menin-gitis	Other
Northern:		
Cheshire	124	*27*
Cumberland	*105*	153
Durham	250	64
Lancashire	129	55
Northumberland	180	*43*
Yorkshire: E. Riding	155	*73*
Yorkshire: N. Riding	157	*61*
Yorkshire: W. Riding	137	54
Other:		
Berkshire	*31*	*23*
Derbyshire	65	*35*
Devonshire	134	*38*
Essex	64	37
Gloucestershire	122	*41*
Kent	87	31
Leicestershire	*65*	76
Lincolnshire: Lindsey	154	*36*
London	99	29
Middlesex	67	*18*
Norfolk	92	*54*
Northamptonshire	*50*	*21*
Nottinghamshire	143	59
Oxfordshire	*31*	*16*
Somersetshire	121	*49*

English counties with county boroughs	E.A.D.R. 0–14	
	Menin-gitis	Other
Southampton	81	*32*
Staffordshire	133	52
Suffolk East	*12*	*43*
Surrey	54	*26*
Sussex East	*66*	*17*
Warwickshire	89	51
Worcestershire	134	*46*
Welsh counties		
Anglesey	*98*	—
Brecknockshire	—	—
Caernarvonshire	*227*	*119*
Cardiganshire	—	*89*
Carmarthenshire	*82*	—
Denbighshire	*127*	*50*
Flintshire	*57*	*58*
Glamorganshire	146	73
Merionethshire	*114*	*133*
Monmouthshire	164	*29*
Montgomeryshire	*306*	*111*
Pembrokeshire	*56*	—
Radnorshire	—	*209*
England and Wales	**110**	**44**

27. Dysentery.—Table LXVI shows the number of notifications of dysentery (all forms) in each year 1931 to 1947 and the number of registered deaths assigned to amœbic, bacillary, and unspecified or other dysentery, including deaths of non-civilians registered in England and Wales.

Deaths due to amœbic dysentery—9 in 1944 and 11 in 1945, increased to 17 in 1946 and 16 in 1947, this being attributable to the return to the United Kingdom of troops who had been stationed overseas. Deaths due to bacillary dysentery, on the other hand, declined from 102 in 1944 and 113 in 1945 to 55 in 1946 and 48 in 1947. This decline was paralleled by that of notifications which, though including all forms of dysentery, predominantly comprised cases of the bacillary type. Corrected notifications dropped from over 16,000 in 1945 to under 8,000 in 1946 and under 4,000 in 1947.

Compared with previous years the ratios of notifications to deaths during 1944 and 1945 were high, 83 and 99 respectively, but subsequently fell to 65 in 1946 and 46 in 1947. These ratios, however, are still much higher than those usually recorded before 1939, and suggest either that notification has become more complete, that a mild type of infection has prevailed or that the sulphonamide drugs have effectively reduced the fatality of the disease.

Table LXVI.—Dysentery : Deaths and Notifications, 1931-1947.

	Number of notifications (all forms of dysentery)	Number of deaths registered					Ratio of notifications to deaths (all forms)
		Amœbic dysentery	Bacillary dysentery	Unspecified or other dysentery	Total not specified as amœbic	All forms	
1931	836	8	40	47	87	95	8·8
1932	924	2	46	61	107	109	8·5
1933	783	5	37	33	70	75	10·4
1934	763	7	37	41	78	85	9·0
1935	1,177	8	55	32	87	95	12·4
1936	1,333	6	43	23	66	72	18·5
1937	4,167	6	61	44	105	111	37·5
1938	4,170	10	62	40	102	112	37·2
1939	1,941	10	63	23	86	96	20·2
1940	2,860	4	142	39	181	185	15·5
1941	6,670	15	244	70	314	329	20·3
1942	7,296	8	130	60	190	198	36·8
1943	7,905	6	88	30	118	124	63·8
1944	(*a*) 13,346 (*b*) 13,000	9	102	46	148	157	82·8
1945	(*a*) 16,774 (*b*) 16,247	11	113	41	154	165	98·5
1946	(*a*) 8,459 (*b*) 7,870	17	55	49	104	121	65·0
1947	(*a*) 4,168 (*b*) 3,761	16	48	17	65	81	46·4

(*a*) Original notifications. (*b*) Fully corrected for diagnosis revision.

Table LXVII.—Dysentery : Corrected Notifications and Fatality Rates by Sex and Age, 1944 to 1947.

Ages (l.b.d.)	1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
	Notifications* per 100,000 living							
Civilians								
0–	131	107	144	115	57	48	26	21
5–	51	43	58	54	25	24	7	5
15–	16	20	26	29	14	15	7	6
45–	10	15	17	21	12	13	9	10
65 and over... ...	23	33	30	33	14	20	11	11
All ages	32	29	41	37	19	19	9	8
Non-civilians ...	1,242†	282†	1,157†	362†	164†	18†	44†	6†
	Deaths per 1,000 notifications*							
Civilians								
0–	17	12	14	9	21	13	38	11
5–	3	6	5	1	4	2	5	8
15–	11	4	10	2	23	2	29	9
45–	26	22	13	15	27	4	20	17
65 and over... ...	43	28	36	38	34	48	19	37
All ages	15	12	13	9	20	10	26	16
Non-civilians ...	6	—	7	3	43	—	91	—

* Fully corrected for diagnosis revision.

† Number of notifications in England and Wales.

Table LXVII gives corrected notifications and fatality rates by sex and age, from 1944 to 1947. The notifications in respect of non-civilians are numbers, not rates, and do not indicate how the incidence of the disease has varied in relation to the numbers at risk.

In each year incidence has been greatest in children under five years of age. During the epidemic years 1944 and 1945 incidence declined with advancing age up to 65, but thereafter tended to rise again. This age gradation was discernible also in 1946, but by 1947 there was little difference between rates at ages over five. Comparing the rates at each age in 1947 with those in 1944, the largest relative reductions occurred among children and old persons, periods of life at which incidence had previously been highest. Rates among boys were higher than among girls, but at higher ages the sex ratio was generally reversed ; in 1947, however, there was little difference between the sexes.

The fatality rate, which was lowest in 1945 when prevalence was at its maximum, rose in 1947 to 26 deaths per thousand notifications for males and 16 per thousand for females. Fatality was low at ages 5–14, increasing at lower and at higher ages. Among children and young adults male fatality was higher than female, but at ages over 65 there was a female excess in each year except 1944. The fatality rate of non-civilian males in 1947 was 91 per thousand (4 deaths from 44 notified cases) compared with 29 per thousand for civilian males aged 15–44. A similar non-civilian excess was apparent in 1946, when

the non-civilian fatality rate was 43 per thousand, but not in 1944 and 1945. Probably in 1946 and 1947 there was a relative preponderance among the armed forces of dysentery of a more severe type.

30. Syphilis.—Since 1940, diseases of syphilitic origin such as locomotor ataxia, general paralysis of the insane and aortic aneurysm, even if not specifically described on death certificates as resulting from syphilis, have been included in International List No. 30 under the general title of syphilis.

On the basis of the 1940 Classification deaths from syphilis (all forms) during 1935–39 averaged 3,425 per year, and during 1940–45, 2,851 per year. In 1946 and 1947 the numbers were 2,462 and 2,315 respectively. The C.M.I. (persons) for 1901–05 was 2·065, for 1921–25, 1·353, for 1941–45, 0·762, for 1946, 0·643 and for 1947, 0·593. Table LXVIII shows that from 1931 to 1947 improvement was relatively greater among males than females, the male C.M.I. falling from 1·257 in 1931 to 0·578 in 1947, while the female C.M.I. fell from 1·028 to 0·643.

Table LXVIII.—Syphilis and Diseases of Syphilitic Origin : Death Rates and Total Comparative Mortality Indices, 1931 to 1947.

	Death rate per million living*										C.M.I.† (1938 base year)	
	Locomotor ataxia		G.P.I.		Aneurysm of aorta		Congenita syphilis		Other and unspecified		All forms	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1931	23	4	44	11	38	10	10	8	35	13	1·257	1·028
1932	26	5	40	10	37	10	9	7	30	13	1·183	1·015
1933	24	5	36	10	35	12	7	6	33	13	1·125	1·056
1934	20	4	36	10	37	12	6	5	33	11	1·091	0·971
1935	22	4	33	10	38	13	6	4	35	11	1·087	0·975
1936	20	4	30	10	40	14	6	4	32	12	1·025	0·978
1937	18	4	27	11	38	16	5	3	34	13	0·983	1·037
1938	18	4	28	9	38	16	4	3	37	13	1·000	1·000
1939	18	4	28	8	35	14	4	3	35	13	0·963	0·966
1940	17	4	28	9	34	13	4	3	32	13	0·919	0·902
1941	15	4	29	9	33	13	4	4	31	12	0·890	0·888
1942	12	3	25	8	32	13	4	3	32	12	0·838	0·795
1943	12	3	21	7	30	14	5	4	29	12	0·772	0·818
1944	11	2	18	6	28	15	4	3	25	11	0·695	0·761
1945	11	2	16	6	29	12	3	4	23	9	0·648	0·662
1946	9	2	16	6	32	13	4	3	23	9	0·636	0·671
1947	8	2	14	5	33	15	2	2	20	8	0·578	0·643

* Including deaths of non-civilians in England and Wales; based on total population inclusive of armed forces at home and abroad in 1940 to 1947, and on the mid-year population in 1939. Rates in 1931 to 1939 are corrected to 1940 classification.

† Civilians only from September 3rd, 1939 (Males) and from 1st June, 1941 (Females).

Compared with 1931, with 23 deaths per million, the male death rate from locomotor ataxia had decreased to less than one-half by 1944 and 1945 and the decline continued in the next two years, the rate in 1947 being 8 per million. The decline in the female rate was of similar degree. The male death rate from general paralysis of the insane, 44 per million in 1931, decreased steadily each year until the period 1938–41, when it showed a slight tendency to increase. The decline was resumed in 1942, and by 1947 the rate was 14 per million. Between 1931 and 1947 the female rate fell from 11 to 5 per million. In contrast with these two syphilitic diseases of the nervous system there has been much less change in the death rate from aortic aneurysm. The male rate remained at about 38 per million from 1931 to 1938, fell steadily during the next few years to 28 in 1944, and then began to rise again. It was 33 per

million in 1947. The female rate, on the other hand, has shown no tendency to decline. It rose from 10 in 1931 to 16 in 1937 and 1938 and has since then remained between 12 and 15 per million. Deaths from congenital syphilis, which do not differ between the sexes either in level or in trend, have decreased from 10 per million (male) and 8 per million (female) in 1931 to 2 per million in both sexes in 1947. The death rate from other and unspecified syphilis, 35 (male) and 13 (female) in 1931, remained at about this level until 1942, but since then has begun to decrease.

Table LXIX.—Syphilis and Diseases of Syphilitic Origin : Mean Annual Death Rates by Sex and Age, 1940-45, 1946 and 1947.

Ages	Locomotor ataxia		G.P.I.		Aneurysm of aorta		Congenital syphilis		Other and unspecified		All forms of syphilis	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Death rate per million living, 1940–45*												
0–	—	—	1	0	0	0	16	14	0	—	17	14
15–	0	—	4	2	1	1	2	2	3	2	9	6
25–	0	0	6	3	2	1	1	1	6	3	15	8
35–	3	1	25	11	9	3	0	1	18	10	55	25
45–	17	5	67	20	45	11	0	0	55	23	184	60
55–	50	10	66	18	115	29	0	0	101	30	332	88
65 and over	63	10	29	5	146	74	0	0	90	24	327	114
All ages	**13**	**3**	**23**	**7**	**31**	**13**	**4**	**3**	**28**	**11**	**99**	**39**
Death rate per million living, 1946*												
0–	—	—	1	—	—	—	17	14	—	—	17	14
15–	—	—	2	2	1	1	1	2	2	4	5	8
25–	—	—	3	1	2	0	0	0	5	5	10	6
35–	2	0	16	7	8	2	—	—	12	5	37	14
45–	11	3	44	16	44	8	—	1	41	19	140	47
55–	31	10	49	14	109	28	1	0	72	21	262	75
65 and over	44	7	22	4	161	73	1	—	89	17	316	102
All ages	**9**	**2**	**16**	**6**	**32**	**13**	**4**	**3**	**23**	**9**	**84**	**33**
Death rate per million living, 1947*												
0–	—	—	1	0	—	—	9	9	—	—	10	9
15–	—	—	2	1	1	—	0	0	1	2	4	4
25–	1	—	4	2	2	—	1	1	2	2	9	4
35–	1	0	9	6	7	3	—	1	9	5	26	15
45–	9	2	35	15	42	11	1	—	37	15	124	44
55–	20	5	43	11	110	31	—	—	73	19	245	66
65 and over	50	9	28	5	166	82	—	0	73	22	317	118
All ages	**8**	**2**	**14**	**5**	**33**	**15**	**2**	**2**	**20**	**8**	**77**	**32**

* Including deaths of non-civilians in England and Wales; based on total population inclusive of armed forces at home and abroad.

Table LXIX compares the mean annual death rates by sex and age for 1940–45, 1946, and 1947. Expressing death rates of males at all ages as a percentage of the corresponding female rates the sex ratios were :—

	1940–45	1946	1947
Locomotor ataxia	414	354	398
General paralysis of the insane	306	272	261
Aneurysm of aorta	233	245	218
Congenital syphilis	119	123	114
Other and unspecified	251	264	247
All forms	**257**	**251**	**236**

These ratios have remained practically constant during the three periods. Locomotor ataxia had the greatest excess of male mortality—a ratio of 4 to 1. Next came general paralysis of the insane, other and unspecified forms of syphilis and aneurysm of the aorta, with male rates two to three times those for females. Congenital syphilis, on the other hand, showed only a very small male excess. Combining all forms of syphilis, the sex ratio decreased from 257 in 1940–45 to 236 in 1947.

The percentage sex ratio at different ages for all forms of syphilis combined were :—

	1940–45	1946	1947
0–	116	126	107
15–	144	64	99
25–	184	160	218
35–	218	259	176
45–	308	295	282
55–	379	351	370
65 and over	287	310	268
All ages	**257**	**251**	**236**

There was only a small male excess at ages under 15 where the congenital form of the disease was most prevalent. The ratio increased with age to a maximum at 55–64 of between 3 and 4 to 1, but fell again above the age of 65. Only in the age group 15–24 was there any substantial change in the sex ratio between 1940–45 and 1946–47, when a male excess was replaced by a female excess. It can be seen from Table LXIX that the female death rate at ages 15–24 did not decline like that of males between 1940–45 and 1946 but increased from six to eight per million. In 1947, however, it fell again to four.

Table LXX.—Syphilis and Diseases of Syphilitic Origin : Death Rates per million living in Regions and different classes of Area by Sex at Ages 45-64, 65 and over, 1947.

Area	45–64		65 and over	
	Males	Females	Males	Females
England and Wales	**175**	**54**	**313**	**116**
Regional Summary :				
South East	194	55	434	194
Greater London	218	65	555	276
Remainder of S.E.	161	43	311	106
North	191	59	280	77
North I	188	38	245	79
North II	250	49	277	112
North III	180	76	326	100
North IV	186	58	267	57
Midland	136	61	226	81
Midland I	155	55	235	89
Midland II	99	73	210	66
East	143	47	247	69
South West	163	16	243	57
Wales	149	35	179	34
Wales I	148	23	215	42
Wales II	151	64	102	19
Density Summary :				
County Boroughs*	225	73	349	83
Other Urban Districts* ...	147	38	239	83
Rural Districts*	101	37	184	65

* Excluding Greater London.

Table LXX gives death rates at ages 45–64 and 65 and over in 1947 by regions and density aggregates. At ages 45–64, the highest male rate, 250 per million, was in the North II region, followed by Greater London with 218 per million. The lowest male rate, 99 per million, was recorded in Midland II. The highest female death rate at 45–64 was in North III, 76 per million, followed by Midland II with 73 per million. The South West region, with 16 per million, had the lowest rate. The regions showed little correspondence between male and female death rates at these ages.

At ages 65 and over both male and female rates were highest in Greater London with 555 and 276, and were lowest in Wales II with 102 and 19. Among males at both ages the rates in county boroughs were much higher than in other urban districts and these in turn higher than in rural districts. Among females the association was less clear, but again the county boroughs had higher rates than the rural districts.

32a. Spirochætosis ictero-hæmorrhagica (Weil's Disease).—Deaths attributed to this cause averaged 13 per year during 1935–39 and 21 per year during 1940–45. In 1946 and 1947 there were 16 and 17 deaths respectively. The distribution by sex and age from 1931 to 1947 is shown in Table LXXI.

Deaths of males at ages under 45 in 1942–43, 1944–45 and 1946–47 numbered 17, 19 and 17 respectively ; and at ages 45 and over there were 13, 29 and 10.

It is clear that the high mortality in 1944–45 compared with the years on either side was confined to older men. The number of deaths among boys and among men under 45 has changed little from year to year.

Table LXXI.—Spirochætosis ictero-hæmorrhagica (Weil's Disease): Deaths by Sex and Age of Civilians and Non-civilians, 1931-35, 1936-39 and each year 1940 to 1947.

Ages	1931-35*		1936-39*		1940		1941		1942		1943		1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0–	—	1	1	—	—	—	1	—	1	1	2	1	—	—	—	—	—	—	—	1
15–	4	3	1	1	3	—	5	—	3	—	1	1	3	1	—	1	3	1	—	1
25–	5	—	11	—	7	—	1	—	2	—	3	1	2	1	7	—	3	1	2	—
35–	4	—	5	2	3	—	6	—	3	—	2	—	3	—	4	—	3	—	6	1
45–	7	—	15	1	1	—	2	—	4	1	4	—	6	1	6	—	3	—	3	—
55–	6	—	11	1	5	—	1	—	1	—	2	1	5	—	9	—	2	—	—	—
65 and over ...	3	1	3	1	1	—	2	—	2	—	—	1	2	—	1	1	—	—	2	1
All ages	**29**	**5**	**47**	**6**	**20**	**—**	**18**	**—**	**16**	**2**	**14**	**5**	**21**	**3**	**27**	**2**	**14**	**2**	**13**	**4**

* According to classification in use in 1931–39. Deaths at all ages of males in 1931–35 were 28 by 1940 classification and deaths of females in 1936–39 were 4.

33. Influenza.—Deaths during 1935–39 averaged 8,429 per year and during 1940–45, 6,831 per year. For a disease like influenza, however, which is characterised by severe epidemics at irregular intervals, the average number of deaths over periods of years are of limited value. In 1937 there were 17,132 deaths, in 1938, 4,446, in 1943, 12,616, and in 1945, 2,686. In 1946 and 1947 the numbers were 5,290 and 3,310 respectively. Table 9 shows that the C.M.I. for five-year periods has declined progressively since 1921. In 1921–25 it was 3·8, in 1926–30, 3·5, in 1931–35, 2·9, in 1936–40, 2·1, and in 1941–45, 1·2. For 1946 the C.M.I. was 1·0 and for 1947, 0·6. Thus, although sharp epidemics with a considerable associated mortality have occurred in recent years, there is a clearly observable tendency for the recorded death rate from influenza to decline. Some, at any rate, of this decline can be attributed to treatment by chemotherapy of the secondary bacterial infections of the respiratory system that often occur as complications of influenza.

Table LXXII.—Influenza Mortality in each Quarter and Pneumonia Mortality in December and March Quarters, in terms of the corresponding Quarter of 1938. Mean Air Temperatures, 1921 to 1947.

Year	Standardized mortality comparison with corresponding quarter of 1938*						Mean air temperature (Greenwich) in excess or defect of average for 1921–47			
	Influenza				Pneumonia		Degrees Fahrenheit			
	March	June	Sept.	Dec.	March	Dec.	March	June	Sept.	Dec.
1921	2·069	1·847	1·586	4·430	1·428	2·034	+3·4	+0·6	+2·3	+1·9
1922	10·924	1·636	1·623	1·846	1·803	1·741	+0·1	−0·1	−3·8	−1·1
1923	1·399	3·332	2·139	2·229	1·127	1·715	+3·7	−2·9	−0·1	−2·3
1924	7·666	3·457	1·581	2·219	1·838	1·576	−1·3	+0·3	−1·1	+1·8
1925	4·535	2·227	1·687	2·652	1·274	2·265	+1·1	+0·7	−1·0	−1·3
1926	1·698	3·077	1·606	2·364	1·258	1·623	+2·7	−0·4	+1·1	−1·4
1927	10·304	1·442	1·762	2·595	1·881	1·581	+1·7	−0·5	−1·3	−1·7
1928	1·820	1·712	1·691	2·292	1·224	1·512	+2·3	−1·2	+0·3	+0·6
1929	13·487	2·601	1·492	1·784	2·493	1·455	−4·1	−1·3	+2·1	+1·1
1930	1·212	0·886	1·207	1·552	1·099	1·351	+0·9	+0·7	−0·1	+0·6
1931	5·094	1·671	1·338	2·927	1·621	1·520	−1·4	+0·3	−2·7	+0·7
1932	4·890	1·234	1·028	2·463	1·325	1·375	−0·2	−1·2	+1·2	+0·1
1933	10·478	0·800	0·968	1·854	1·386	1·491	+0·1	+1·6	+3·6	−2·3
1934	1·409	1·090	0·909	1·260	1·245	1·126	−1·0	+1·0	+1·7	+2·5
1935	1·448	2·069	1·006	1·495	0·947	1·323	+1·7	−0·4	+1·7	−0·4
1936	1·450	0·863	0·955	1·775	1·209	1·238	+0·2	−0·4	0·0	−0·3
1937	7·775	0·863	0·839	1·394	1·175	1·438	+0·5	+1·1	+1·3	−1·2
1938	1·000	1·000	1·000	1·000	1·000	1·000	+3·6	−1·3	−0·3	+1·3
1939	2·997	1·068	0·655	0·927	0·967	0·828	+0·8	−0·7	−6·2	−0·9
1940	4·919	0·658	0·614	0·887	1·360	1·093	−3·8	+1·4	−1·6	−0·7
1941	2·558	0·716	0·533	0·820	1·070	0·952	−2·8	−3·0	0·0	+0·5
1942	0·983	0·435	0·529	0·738	0·790	0·830	−5·4	+0·3	−0·1	+1·0
1943	1·150	0·484	0·463	10·600	0·740	1·527	+1·7	+2·3	0·0	−0·2
1944	1·248	0·320	0·422	0·746	0·670	0·843	−0·4	+0·1	−1·0	−1·7
1945	0·691	0·200	0·320	0·869	0·721	0·850	+1·0	+2·1	+0·3	+1·9
1946	1·965	0·295	0·274	0·464	0·691	0·797	−0·2	−0·6	−0·8	−0·4
1947	1·139	0·193	0·182	0·401	0·854	0·755	−6·2	+2·2	+3·3	+1·0

* Derived from the Comparative Mortality Index for the year (Table 9) multiplied by the ratio of proportion of annual deaths occurring in the quarter to the corresponding proportion for 1938.

Table LXXII shows the comparative mortality for each quarter during 1921 to 1947, based upon the corresponding quarter of 1938 as unity and assuming changes in age distribution of the population to have affected the death rates by separate quarters in the same measure as the annual death rates. For example, the index shown for the March quarter of 1947, 1·139, was obtained as follows :—

Standardised mortality comparison for March Quarter, 1947,

$$= \frac{\text{C.M.I. for 1947} \times \text{Deaths in March Quarter, 1947}}{\text{Deaths in March Quarter, 1938}} \times \frac{\text{Deaths in 1938}}{\text{Deaths in 1947}}$$

$$= \frac{0{\cdot}635 \times 2{,}534}{2{,}078} \times \frac{4{,}859}{3{,}304} = 1{\cdot}139.$$

Certain quarters stand out as having very high indices, indicative of periods of exceptional epidemic prevalence. Such periods were the March quarters of 1922, 1927, 1929 and 1933 and the December quarter of 1943. It should be noted that each series is based on the mortality of the corresponding quarter of 1938 so that the table does not show which of the four quarters has tended to have the highest absolute rates. It shows only that the March quarters are liable to much greater fluctuations than the other quarters and that the death rates for March quarters have not declined nearly as much as those for other quarters during the last few years.

Table LXXII also gives similar indices for pneumonia not certified as influenzal in the March and December quarters of 1921 to 1947, and deviations of mean air temperature for each quarter from the average for that quarter during 1921 to 1947.

The following series of product-moment correlation coefficients, calculated for March quarters only, demonstrate the degree of conformity between variations in influenza and pneumonia mortality, mean quarterly temperature at Greenwich, and the time scale in calendar years (criterion of significance, 5 per cent.).

Zero-Order Coefficients :—

Influenza x Year	— 0·42 (Significant)
Pneumonia x Year	— 0·67 (Significant)
Temperature x Year	— 0·43 (Significant)
Influenza x Pneumonia	+ 0·84 (Significant)
Influenza x Temperature	— 0·19 (Not Significant)
Pneumonia x Temperature	— 0·14 (Not Significant)

First-Order Coefficients :—

(*a*) *Keeping Year constant*

Influenza x Pneumonia	+ 0·83 (Significant)
Influenza x Temperature	— 0·45 (Significant)
Pneumonia x Temperature	— 0·64 (Significant)

(*b*) *Keeping Temperature constant*

Influenza x Pneumonia	+ 0·84 (Significant)
Influenza x Year	— 0·57 (Significant)
Pneumonia x Year	— 0·88 (Significant).

Second-Order Coefficient :—

Keeping Year and Temperature constant

Influenza x Pneumonia	+ 0·79 (Significant)

The set of six zero-order coefficients (customarily expressed as r_{xy}) show evidence of an inverse correlation between influenza and calendar year, between pneumonia and calendar year and, somewhat surprisingly, between temperature and calendar year*. During the earlier years of the period influenza mortality, pneumonia mortality and temperature all tended to be higher than during the later years. The trend of influenza was subject to much more violent epidemic fluctuations than was the case for pneumonia, so that the downward trend of pneumonia was less disturbed than for influenza. Correlation was practically absent between either influenza or pneumonia and the mean temperature of the March quarters, but there was strong positive correlation between the two diseases (+ 0·84).

The first three first-order correlation coefficients (usually expressed $r_{xy.z}$), which eliminate the effect of calendar year on the three other variables and make allowance for their downward trends in time, reveal fairly strong negative correlations with temperature both for influenza and pneumonia. The mortality of pneumonia and of influenza both tended to be higher during colder winters.

When the coefficients are adjusted so as to assume no change in temperature from year to year in order to measure the trend in time undisturbed by temperature changes, the three first-order coefficients so obtained are similar in magnitude and direction to the previous three.

The final step is to measure the correlation between pneumonia and influenza assuming neither to be influenced either by temperature or by time. This yields a second-order coefficient of the form $r_{xy.zw}$ with a statistically significant value of 0·79.

* For further comment on trends of temperature see Lewis, L. F. ; Recent Climatic Trend. Meteorological Magazine, Vol. 79, 1950, pp. 189–191.

The conclusions to be drawn from these results are that the mortality from influenza and from pneumonia not attributed to influenza are both tending to decline, that superimposed on this downward trend there is a tendency for both to be high in cold winters, that pneumonia has a more definite and steady downward trend than influenza and is more liable to be influenced by variations in temperature, and that in spite of this the mortality of pneumonia and of influenza tend to move together. When there is high mortality from influenza during the winter, then, whatever the year and whatever the temperature, the mortality from non-influenzal pneumonia also tends to be high. This confirms previous conclusions that during epidemics of influenza increased numbers of deaths occur which are attributed on death certificates to non-influenzal pneumonia. Other causes of death, not recognised as being due to influenza, also increase during these epidemics and the reason for this is not understood.

Table LXXIII.—Influenza : Death Rates per million living by Sex at Ages 45-64 and 65 and over in Regions and different classes of Area, 1947.

Area	45–64		65 and over	
	Males	Females	Males	Females
England and Wales	**118**	**61**	**433**	**384**
Regional Summary :				
South East	117	56	419	401
Greater London	128	56	486	467
Remainder of South East ...	104	56	350	330
North	120	55	382	330
North I	180	91	491	396
North II	86	25	423	386
North III	110	45	313	271
North IV	112	55	374	331
Midland	124	68	503	419
Midland I	133	69	471	436
Midland II	106	67	562	387
East	90	64	342	413
South West	76	56	462	267
Wales	159	105	602	572
Wales I	163	104	645	610
Wales II	151	106	511	503
Density Summary :				
County Boroughs*	118	53	423	330
Other Urban Districts* ...	124	64	366	379
Rural Districts*...	101	76	505	392

* Excluding Greater London.

Table LXXIII shows death rates in 1947 at ages 45–64 and 65 and over in the regions and density aggregates. In each of the two age groups of females and in males aged 65 and over rates were much higher in Wales than in the English regions but North I came first for males aged 45–64. Rates were lowest for the younger group in the South West, for elderly men in North III and for

elderly women in the South West. The death rates for women at both ages clearly decreased with urbanisation, but for men there was no consistent association with urbanisation. The following table shows, for the main regional groups and density aggregates, (*a*) death rates expressed in terms of national rates taken as a hundred and (*b*) percentage ratios of male to female death rates.

Area	Regional death rates per cent. of those of England and Wales				Male death rates per cent. of those of females	
	45–64		65 and over		45–64	65 and over
	M.	F.	M.	F.		
England and Wales ...	**100**	**100**	**100**	**100**	**193**	**113**
South East	99	92	97	104	209	104
North	102	90	88	86	218	116
Midland	105	111	116	109	182	120
East	76	105	79	108	141	83
South West	64	92	107	70	136	173
Wales	135	172	139	149	151	105
County Boroughs* ...	100	87	98	86	223	128
Other Urban Districts*	105	105	85	99	194	97
Rural Districts* ...	86	125	117	102	133	129

* Excluding Greater London.

At ages 45–64 the death rate of men in England and Wales was almost twice that of women. It was more than double in the South East and in the North, but the excess was less in the East, South West and Wales. This agrees with the evidence from the density aggregates that the male excess increased with urbanisation. At ages over 65, where in the country as a whole there was a small male excess of 13 per cent., the ratio in the South West was very high, 173 per cent., whereas in the East region there was no male excess. The percentage sex ratio was almost the same in the county boroughs (128) as in the rural districts (129) but in urban districts other than county boroughs there was practically no difference between the sexes.

35. Measles.—Deaths during the five years 1935–39 averaged 1,333 per year and during the six years 1940–45, 701 per year. In 1946 and 1947 the numbers of deaths were 203 and 644 respectively. The mean annual death rates per million children aged under 15 (Table 9) were 1,082 in 1851–60, 1,144 in 1891–1900, 915 in 1901–10, 838 in 1911–20, 420 in 1921–25 and 357 in 1926–30. The rates for single years since then have been :—

1931 ...	320	1937 ...	106	1943 ...	86
1932 ...	332	1938 ...	169	1944 ...	28
1933 ...	190	1939 ...	34	1945 ...	80
1934 ...	368	1940 ...	95	1946 ...	22
1935 ...	134	1941 ...	128	1947 ...	69
1936 ...	281	1942 ...	53		

Apart from a break in the sequence in 1940, there has been a regular alternation since 1932 between years of high and low mortality, resulting not from variations in fatality but from the epidemic prevalence of the disease. In addition, there has been a considerable downward trend of mortality beginning

early this century and accelerating rapidly in recent years. This trend of decline is in large measure attributable to diminished fatality, towards which the use of chemotherapy must have played an important part during the last few years.

Death rates at ages under 1 and 1–4 appear in Tables XXIII and XXVIII.

The periodicity of measles has attracted the attention of epidemiologists for many years. The following table gives the number of deaths attributed to measles in each quarter since 1931 :—

Year	March	June	September	December
1931	1,521	936	298	530
1932	1,253	1,505	336	319
1933	615	703	234	392
1934	1,903	1,467	269	117
1935	304	460	170	418
1936	1,288	1,100	211	144
1937	245	296	159	351
1938	883	599	94	54
1939	87	103	62	57
1940	153	139	171	398
1941	641	394	74	26
1942	52	124	72	214
1943	480	233	32	19
1944	29	44	30	147
1945	437	226	41	18
1946	51	45	46	62
1947	353	190	64	37

Note :—The figures have not been corrected for the change in the method of cause selection introduced in 1940.

During 1932 to 1939 an epidemic prevalence occurred during the first half of each even-numbered year and in 1934, 1936 and 1938 the number of deaths was highest in the month of March. The epidemic due in the first quarter of 1940 was delayed, however, especially in London, and did not culminate until February of the following year, 1941. The disturbance to the regular sequence in 1940 was probably due to the extensive evacuation of school children. Since 1941, epidemics have been centred in the first quarter of each odd-numbered year. Mortality during the December quarter preceding and the June quarter following has moved in parallel with the March quarter.

Notification of measles was introduced for the whole of England and Wales in 1940 and notification rates in successive years per thousand living have been as follows :—

1940	10·19	1944*	4·16
1941	10·53	1945*	11·67
1942	7·46	1946*	3·94
1943	9·88	1947*	9·41

Table LXXIV gives corrected notification and fatality rates by sex and age for the years 1944 to 1947. At each separate age period the female notification rates have usually exceeded the male rates, but at all ages the male rate was considerably in excess owing to the large preponderance of females in the adult population at ages when measles is rare (cf. whooping cough, page 82).

* Fully corrected for diagnosis revision, but the effect of this upon the continuity of the rates is negligible.

Table LXXIV.—Measles : Corrected Notification and Fatality Rates by Sex and Age (Civilians), 1944 to 1947.

Ages (l.b.d.)	1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.
	Notifications* per 1,000 living							
0– ...	8·9	9·1	27·6	28·3	9·4	10·3	18·9	20·1
1– ...	24·9	25·0	76·7	75·3	27·1	26·4	62·2	62·9
3– ...	34·4	34·7	102·6	103·5	36·6	36·5	88·0	88·2
5– ...	23·0	24·0	61·7	62·8	21·8	22·4	53·0	53·2
10– ...	3·0	3·7	7·4	8·1	2·2	2·4	5·3	5·9
15– ...	0·2	0·3	0·4	0·5	0·1	0·1	0·3	0·4
All ages ...	**4·8**	**3·7**	**13·6**	**10·2**	**4·3**	**3·6**	**10·1**	**8·8**
	Deaths per 1,000 notifications*							
0– ...	14·7	14·0	14·4	11·7	13·0	12·5	16·7	13·0
1– ...	3·4	3·3	3·0	3·1	2·0	1·8	3·2	3·0
3– ...	0·6	1·0	0·6	0·7	0·6	0·3	0·6	0·6
5– ...	0·2	0·4	0·3	0·4	0·3	0·2	0·3	0·3
10– ...	0·2	—	0·7	0·1	—	0·6	0·1	0·4
15– ...	—	0·5	1·9	2·3	3·2	1·8	0·5	2·1
All ages ...	**1·5**	**1·6**	**1·7**	**1·6**	**1·3**	**1·2**	**1·7**	**1·6**

* Fully corrected for diagnosis revision.

It has been estimated that between two-thirds and four-fifths of all cases of clinically recognisable measles are being notified (see Review for 1940–45, Text page 128, and Studies on Medical and Population Subjects No. 2, pp. 6–7).

The fatality rates (deaths per thousand notifications) in Table LXXIV do not, therefore, over-state the true fatality by more than about one-third. Fatality is highest (between 11 and 17 deaths per thousand cases) among infants under one year, falling to three per thousand at ages 1 and 2 years and less than one per thousand at higher ages of childhood up to 15 years. There has been no consistent difference between the sexes nor any change in the level of fatality between 1944 and 1947.

Table LXXV gives regional notification, death, and fatality rates at ages 0–4 and 5–14 for 1946 and 1947. Although the prevalence of notified cases in 1946 was in general much lower than in 1947, in the North I region it was higher in the former year and in Greater London it was the same in both years at ages 0–4 and almost the same at 5–14. The regions with highest prevalence rates in 1947 at ages 0–4 were North III, Wales I and Midland II, while at ages 5–14 they were the South West, Midland II and North III. The region with the lowest rate at 0–4 was Wales II and at 5–14, North I. Amongst the density aggregates, county boroughs had the highest notification rates at ages 0–4 and rural districts the lowest. At ages 5–14 this order was reversed, prevalence in the rural districts being higher than in the towns. A similar reversal of the urban-rural ratio at ages 5–14 in a year of high prevalence was observed in 1945.

Although at ages 0–4 North III had the highest notification rate in 1947, its death rate was exceeded in North IV region which had a much higher fatality rate. On the whole, as the percentage ratios in Table LXXV indicate, variations in mortality between the regions depended more on differences in prevalence than in fatality. There were, however, some wide differences in fatality ranging, in 1947, from a rate of 3·9 per thousand cases in North I to

Table LXXV.—Measles : Notification Rates at ages 0-4 and 5-14, Death Rates and Fatality Rates in Regions, 1946 and 1947.

Area	Notifications* per 1,000 living at				Deaths at ages 0–4				Regional rates at ages 0–4 per cent. of England and Wales, 1947		
	Ages 0–4		Ages 5–14		Per million living		Per 1,000 notifications*		Notifications per 1,000 living	Deaths per million living	Deaths per 1,000 notifications
	1946	1947	1946	1947	1946	1947	1946	1947			
England and Wales	**27**	**60**	**12**	**30**	**55**	**160**	**2·0**	**2·7**	**100**	**100**	**100**
Regional Summary :											
South East	32	42	18	26	43	83	1·3	2·0	70	52	74
Greater London	43	43	21	24	57	87	1·3	2·0	72	54	74
Remainder of South East...	19	41	13	29	25	77	1·3	1·9	68	48	70
North	35	74	12	28	91	242	2·6	3·3	123	151	122
North I	64	49	23	18	170	191	2·7	3·9	82	119	144
North II	20	60	9	27	29	163	1·4	2·7	100	102	100
North III	15	100	5	35	18	258	1·3	2·6	167	161	96
North IV	38	72	13	29	117	269	3·0	3·7	120	168	137
Midland	15	71	7	34	42	188	2·8	2·6	118	118	96
Midland I	15	67	6	33	41	213	2·7	3·2	112	133	119
Midland II	14	80	7	38	42	137	3·1	1·7	133	86	63
East	23	40	17	32	59	42	2·6	1·0	67	26	37
South West	10	52	7	39	6	122	0·6	2·3	87	76	85
Wales	13	72	6	29	10	198	0·8	2·8	120	124	104
Wales I	10	86	3	32	7	237	0·7	2·8	143	148	104
Wales II	19	33	12	21	19	90	1·0	2·7	55	56	100
Density Summary :											
County Boroughs†	30	72	11	28	81	250	2·7	3·5	120	156	130
Other Urban Districts† ...	22	68	11	32	42	160	1·9	2·4	113	100	89
Rural Districts†	13	44	10	33	31	80	2·3	1·8	73	50	67

* Fully corrected for diagnosis revision.

† Excluding Greater London.

1·0 in the East Region. Fatality was twice as high in county boroughs as in rural districts and the death rates were more than three times as high.

36. Acute poliomyelitis and polioencephalitis.—Deaths from this cause, which numbered 109 in 1944, 139 in 1945 and 128 in 1946, rose to 707 in 1947, by far the highest mortality yet recorded in England and Wales and almost three times greater than the previous maximum recorded in 1938, when there were 256 deaths. Table LXXVI gives numbers of notifications and deaths and death rates by single years from 1931. The annual death rate at ages under 15, which averaged four per million during 1944–46, rose to 33 in 1947. Similarly the death rate at all ages rose from three per million in 1944–46 to 16 in 1947. The proportion of deaths attributed to polioencephalitis was 28·9 per cent. in 1946 and 29·3 per cent. in 1947.

Table LXXVI.—Acute Poliomyelitis and Polioencephalitis : Notifications and Deaths.* 1931 to 1947.

Year	Acute Poliomyelitis		Acute Polioencephalitis		Acute Poliomyelitis and Polioencephalitis	
					Death rate per million	
	No. of notifications	No. of deaths	No. of notifications	No. of deaths	Ages 0–14	All Ages†
1931 ...	341	64	55	35	7	2
1932 ...	656	104	94	75	13	4
1933 ...	714	136	83	67	13	5
1934 ...	590	83	81	53	9	3
1935 ...	633	98	67	48	11	4
1936 ...	530	68	53	35	7	3
1937 ...	768	97	95	56	8	4
1938 ...	1,489	174	96	82	18	6
1939 ...	744	95	88	48	10	3
1940 ...	951	107	128	54	9	4
1941 ...	876	113	83	47	9	4
1942 ...	581	82	93	50	7	3
1943 ...	410	63	46	27	4	2
1944 ...	(*a*)523 (*b*)548	87	(*a*) 67 (*b*) 68	22	4	3
1945 ...	(*a*)827 (*b*)779	97	(*a*) 77 (*b*) 74	42	4	3
1946 ...	(*a*)694 (*b*)611	91	(*a*) 61 (*b*) 62	37	5	3
1947 ...	(*a*)8,752 (*b*)7,207	500	(*a*)583 (*b*)559	207	33	16

* Deaths are corrected to 1940 classification.
† Civilian rates in 1940 to 1947.
(*a*) Original notifications.
(*b*) Corrected for diagnosis revision.

Corrected notifications, after revision of diagnosis in hospital, numbered 673 in 1946, and 7,766 in 1947, to which polioencephalitis contributed 9·2 per cent. in 1946 and 7·2 per cent. in 1947. In 1947 corrected notifications constituted 83 per cent. of the original notifications (poliomyelitis 82 per cent., polioencephalitis 96).

The percentage ratio of deaths to notifications at various periods from 1931–33 to 1947 was as follows :—

	Deaths per 100 original notifications						Deaths per 100 corrected notifications	
	1931–33	1934–37	1938	1939–43	1944–46	1947	1944–46	1947
Poliomyelitis ...	17·2	13·3	11·3	12·5	13·5	5·7	14·9	6·9
Polioencephalitis ...	74	63	83	50	49	36	50	37

Table LXXVII.—Poliomyelitis and polioencephalitis : Notifications* and Deaths by Sex and Age, with case, death and fatality rates, 1944-46 and 1947.

Age Group	Acute Poliomyelitis				Acute Polioencephalitis				All forms		
	Notifications		Deaths		Notifications		Deaths		Cases per million living	Deaths per 100 cases	Deaths per million living
	M.	F.	M.	F.	M.	F.	M.	F.			
1944-46											
Civilians											
0–	34	30	3	3	6	2	3	6	35	21	7
1–	141	116	6	7	11	15	5	8	73	9	7
3–	110	102	3	2	13	10	1	3	68	4	3
5–	222	199	8	10	14	22	5	4	54	6	3
10–	148	127	14	15	19	9	8	2	36	13	5
15–	148	144	35	20	12	10	5	6	22	21	5
25 and over ...	110	129	59	58	20	19	29	11	4	56	2
Unknown ...	13	13	—	—	1	2	—	—	—	—	—
All ages ...	**926**	**860**	**128**	**115**	**96**	**89**	**56**	**40**	**17**	**17**	**3**
Non-civilians (all ages) ...	55	7	30	2	18	1	4	1	—	46	—
1947											
Civilians											
0–	148	129	11	7	15	10	12	9	346	13	45
1–	565	451	16	12	37	23	16	7	804	5	38
3–	535	414	13	15	41	24	11	4	773	4	33
5–	890	612	32	21	74	30	19	13	566	5	30
10–	584	446	36	25	57	27	16	6	405	7	30
15–	571	560	67	44	40	47	17	18	237	12	28
25 and over ...	576	558	108	77	60	64	33	23	46	19	9
Unknown ...	32	24	—	—	2	—	—	—	—	—	—
All ages ...	**3,901**	**3,194**	**283**	**201**	**326**	**225**	**124**	**80**	**183**	**9**	**16**
Non-civilians (all ages) ...	105	7	16	—	8	—	3	—	—	16	—

* Corrected for diagnosis revision.

Table LXXVII gives corrected notifications and deaths by age for 1944–46 and 1947, with notification and death rates per million living and deaths per hundred notified cases. Both in 1944–46 and 1947 the notification rate was highest at ages 1 and 2, followed by ages 3 and 4, 5–9 and 10–14. Next came infants under one year, then ages 15–24 and lastly ages 25 and over. By contrast fatality was highest at ages 25 and over, less in infancy and at 15–24, and lowest at ages from 1 to 14. The death rate per million living was highest in infants, and declined with increasing age. Ratios of the rates amongst civilians in 1947 to those for 1944–46 were as follows :—

	0–	1–	3–	5–	10–	15–	25 and over	All Ages
Notifications ...	9·9	11·0	11·4	10·5	11·3	10·8	11·5	10·8
Fatality	0·6	0·6	1·0	0·8	0·5	0·6	0·3	0·5
Deaths	6·4	5·4	11·0	10·0	6·0	5·6	4·5	5·3

The notification rates were increased in 1947 in similar degree at each age. The ratios of deaths to notifications were lower in 1947 except at ages 3 and 4, and children between ages 3 and 10 experienced the greatest relative increase in mortality.

The ratios of male to female notifications and deaths at all ages during 1944–46 and 1947 were as follows :—

	Poliomyelitis		Polioencephalitis	
	Cases	Deaths	Cases	Deaths
1944–46	1·08	1·11	1·08	1·40
1947	1·22	1·41	1·45	1·55

As Table LXXVII shows, there was a male excess of deaths from poliomyelitis in 1947 in each age group except 3 and 4 and a similar male excess for polioencephalitis in each age group except 15–24.

Table LXXVIII.—Acute Poliomyelitis and Polioencephalitis : Notifications* and deaths by age in successive quarters during 1946 and 1947.

Age Group	March Quarter		June Quarter		September Quarter		December Quarter	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1946								
Civilians								
0–	1	2	4	1	11	2	10	2
1–	16	3	12	2	21	4	35	2
3–	7	2	6	1	30	1	34	—
5–	20	2	22	4	61	2	51	3
10–	11	3	12	1	48	4	25	2
15–	18	6	11	2	44	5	36	8
25 and over ...	19	10	12	7	40	14	30	21
Unknown ...	—	—	4	—	3	—	1	—
All Ages ...	**92**	**28**	**83**	**18**	**258**	**32**	**222**	**38**
Non-civilians (all ages) ...	7	3	3	4	5	5	3	—
1947								
Civilians								
0–	5	—	12	1	206	21	79	17
1–	15	1	37	4	784	34	240	12
3–	7	1	49	6	701	23	257	13
5–	14	1	73	5	1,070	49	449	28
10–	13	3	38	4	801	55	262	21
15–	25	8	38	6	821	96	334	38
25 and over ...	19	10	25	14	854	151	360	66
Unknown ...	2	—	2	—	47	—	7	—
All Ages ...	**100**	**24**	**274**	**40**	**5,284**	**429**	**1,988**	**195**
Non-civilians (all ages) ...	6	—	3	1	89	12	22	6

* Corrected for diagnosis revision.

Table LXXVIII gives numbers of corrected notifications and deaths by age during successive quarters of 1946 and 1947. The maximum intensity of the epidemic of 1947 fell within the September quarter when there were over 5,000 cases notified and 429 deaths were registered. In the December quarter notifications fell to just under 2,000 and deaths to 195. The percentage age distributions of the cases notified during the September and December quarters of 1946 and 1947 are compared below.

Quarter	0–	1–	3–	5–	10–	15–	25 and over	Age not known	Total
Sept. Quarter 1946...	4	8	12	23	19	17	16	1	100
Dec. ,, 1946...	5	16	15	23	11	16	14	0	100
Sept. ,, 1947...	4	15	13	20	15	16	16	1	100
Dec. ,, 1947...	4	12	13	23	13	17	18	0	100

Although there were some variations in the proportion of cases at each age, it is evident that the epidemic of 1947 was not attended by any great upset in age distribution compared with 1946.

Table LXXIX gives numbers of cases and deaths in 1947 by age, together with notification and death rates under 15 and at all ages, for the geographical regions, density aggregates and county boroughs, and for urban and rural aggregates in administrative counties.

The case rates under the age of 15 were highest in North I (75·9) and North II (74·6), followed by Greater London (65·7). They were lowest in Midland II (37·7) and the South West (38·4). At all ages, however, the rate was higher in North II (25·4) than North I (22·5), but again Greater London (20·7) came third. South West (13·7) and Midland II (14·3) had the two lowest rates. Both at ages under 15 and at all ages the rates were lowest in the county boroughs and highest in the rural districts.

Table LXXIX.—Poliomyelitis and Polioencephalitis ; Numbers of Notifications and Deaths by age, with notification and death rates ; England and Wales, Geographical Regions, County Boroughs and Urban and Rural aggregates in Administrative Counties ; 1947 (excluding non-civilians).

(1) Notifications corrected for diagnosis revision.

(2) Rates based on less than 20 notifications or deaths are shown in italics.

(3) Numbers of notifications in England and Wales and in regions include some minor amendments which have not been carried out for individual areas.

Area	Number of corrected notifications						Number of deaths					Under 15		All ages	
	0–	5–	15–	25 and over	Age not known	All Ages	0–	5–	15–	25 and over	All Ages	Notifications per 100,000	Deaths per million	Notifications per 100,000	Deaths per million
ENGLAND AND WALES	**2,392**	**2,720**	**1,218**	**1,258**	**58**	**7,646**	**133**	**168**	**146**	**241**	**688**	**55·9**	**33**	**18·3**	**16**
Regional Summary :															
South East...	732	1,127	519	512	12	2,902	39	75	51	106	271	62·2	38	20·3	19
Greater London	432	653	308	280	1	1,674	18	39	23	44	124	65·7	35	20·7	15
Remainder of South East ...	300	474	211	232	11	1,228	21	36	28	62	147	57·8	43	19·7	24
North	1,029	807	328	335	10	2,509	60	57	57	66	240	62·4	40	19·1	18
North I	249	147	54	41	2	493	17	17	8	8	50	75·9	65	22·5	23
North II	95	134	50	49	3	331	5	7	9	11	32	74·6	39	25·4	25
North III	254	197	113	124	4	692	11	10	18	13	52	58·9	27	19·9	15
North IV	431	329	111	121	1	993	27	23	22	34	106	56·4	37	16·1	17
Midland	349	413	212	219	6	1,199	16	19	23	36	94	43·1	20	15·5	12
Midland I	255	286	137	147	1	826	10	10	15	22	57	45·7	17	16·1	11
Midland II	94	127	75	72	5	373	6	9	8	14	37	37·7	26	14·3	14
East	80	152	61	69	1	363	5	8	7	14	34	54·6	31	19·1	18
South West	68	110	48	61	16	303	5	2	4	6	17	38·4	15	13·7	8
Wales	134	111	50	62	13	370	8	7	4	13	32	43·6	27	14·8	13
Wales I	104	76	34	37	5	256	5	4	2	8	19	44·0	22	14·3	11
Wales II	30	35	16	25	8	114	3	3	2	5	13	42·4	39	16·0	18
Density Summary :															
County Boroughs*	734	631	317	305	5	1,992	38	29	41	54	162	47·7	23	15·7	13
Other Urban Districts*	816	812	309	379	18	2,334	53	67	38	86	244	55·7	41	17·5	18
Rural Districts*	410	624	284	294	34	1,646	24	33	44	57	158	60·5	33	21·3	20

* Excluding Greater London.

Table LXXIX—(*contd.*)

Area	Number of corrected notifications						Number of deaths					Under 15		All ages	
	0–	5–	15–	25 and over	Age not known	All Ages	0–	5–	15–	25 and over	All Ages	Notifications per 100,000	Deaths per million	Notifications per 100,000	Deaths per million
County Boroughs :															
Barnsley	7	6	1	1	—	15	—	—	—	—	—	*72*	—	*20*	—
Barrow-in-Furness	12	9	3	1	—	25	2	1	—	1	4	143	*205*	38	*61*
Bath	3	3	5	5	1	17	—	—	—	—	—	*40*	—	*22*	—
Birkenhead	6	3	5	5	—	19	—	—	1	—	1	*27*	—	*14*	*7*
Birmingham	58	60	27	35	—	180	2	3	2	5	12	47	*20*	17	*11*
Blackburn	—	1	—	1	—	2	—	—	—	—	—	*5*	—	*2*	—
Blackpool	3	7	—	3	—	13	1	1	—	—	2	*41*	*81*	*9*	*13*
Bolton	21	7	6	2	—	36	—	2	2	2	6	84	*60*	22	*36*
Bootle	1	3	—	—	—	4	—	1	—	—	1	*20*	*51*	*6*	*15*
Bournemouth	6	4	3	6	—	19	—	—	—	3	3	*41*	—	*14*	*22*
Bradford	29	27	14	20	—	90	1	—	1	1	3	96	*17*	32	*11*
Brighton	4	12	7	6	—	29	—	—	1	1	2	*54*	—	19	*13*
Bristol	15	4	6	7	—	32	—	—	—	1	1	*21*	—	8	*2*
Burnley	1	—	1	—	—	2	—	—	—	—	—	*6*	—	*2*	—
Burton upon Trent	3	3	2	—	—	8	—	1	2	—	3	*57*	*95*	*17*	*63*
Bury	3	4	1	1	—	9	—	—	—	1	1	*63*	—	*16*	*18*
Canterbury	—	1	—	—	—	1	—	—	—	—	—	*19*	—	*4*	—
Carlisle	2	3	1	1	—	7	—	—	1	—	1	*35*	—	*11*	*15*
Chester	2	6	3	3	—	14	—	—	—	1	1	*81*	—	*30*	*21*
Coventry	7	14	6	8	—	35	—	—	—	1	1	37	—	14	*4*
Croydon	15	19	13	11	—	58	—	1	1	3	5	68	*20*	24	*21*
Darlington	3	4	2	—	—	9	—	—	—	—	—	*38*	—	*11*	—
Derby	4	8	5	4	—	21	—	1	—	—	1	*39*	*32*	15	*7*
Dewsbury	4	4	—	2	—	10	—	—	—	1	1	*70*	—	*19*	*19*
Doncaster	4	3	1	2	—	10	—	—	—	—	—	*39*	—	*13*	—
Dudley	3	1	—	—	—	4	1	—	—	1	2	*26*	*66*	*6*	*32*
Eastbourne	—	2	3	2	—	7	—	—	1	—	1	*20*	—	*13*	*18*
East Ham	2	2	1	3	—	8	—	1	—	1	2	*16*	*40*	*7*	*17*
Exeter	3	2	2	3	—	10	—	—	—	1	1	*33*	—	*14*	*14*
Gateshead	5	4	1	3	—	13	1	—	—	—	1	*32*	*36*	*12*	*9*
Gloucester	6	1	2	5	—	14	—	—	—	—	—	*49*	—	*22*	—
Great Yarmouth	6	3	1	1	—	11	—	—	—	1	1	*86*	—	*23*	*21*
Grimsby	12	11	9	3	—	35	1	—	—	1	2	104	*45*	40	*23*
Halifax	2	1	3	—	—	6	—	—	—	—	—	*16*	—	*6*	—
Hastings	11	12	7	1	—	31	—	1	1	—	2	192	*83*	49	*32*
(*1*)	(*2*)	(*3*)	(*4*)	(*5*)	(*6*)	(*7*)	(*8*)	(*9*)	(*10*)	(*11*)	(*12*)	(*13*)	(*14*)	(*15*)	(*16*)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
County Boroughs—*contd.*															
Huddersfield	2	6	2	1	—	11	1	—	—	—	1	*33*	*41*	*9*	*8*
Ipswich	1	3	—	1	—	5	—	—	1	—	1	*18*	—	*5*	*10*
Kingston upon Hull	33	22	12	9	—	76	2	1	—	2	5	75	*41*	27	*18*
Leeds	10	23	12	9	—	54	—	2	3	—	5	31	*19*	11	*10*
Leicester	12	27	19	21	3	82	—	—	—	1	1	66	—	30	*4*
Lincoln	5	4	—	4	—	13	—	—	—	—	—	*66*	—	*19*	—
Liverpool	12	19	5	9	—	45	2	—	—	2	4	15	*10*	6	*5*
Manchester	53	33	19	18	—	123	3	1	3	4	11	57	*27*	18	*16*
Middlesbrough	5	9	3	1	—	18	—	1	1	1	3	*38*	*27*	*13*	*22*
Newcastle upon Tyne	28	8	6	2	—	44	1	1	—	1	3	55	*31*	15	*10*
Northampton	9	8	4	2	—	23	—	—	—	—	—	*78*	—	22	—
Norwich	9	10	5	5	—	29	1	1	—	1	3	*77*	*81*	25	*26*
Nottingham	5	5	11	4	—	25	1	—	2	4	7	*15*	*15*	9	*24*
Oldham	4	6	2	2	—	14	—	—	1	—	1	*42*	—	*12*	*8*
Oxford	4	9	5	4	—	22	—	—	—	—	—	*58*	—	21	—
Plymouth	5	1	2	—	—	8	—	—	—	—	—	*14*	—	*4*	—
Portsmouth	6	8	5	—	—	19	—	—	2	—	2	*28*	—	*9*	*9*
Preston	4	6	2	7	—	19	—	—	—	2	2	*39*	—	*16*	*17*
Reading	1	6	1	2	—	10	—	—	1	—	1	*29*	—	*9*	*9*
Rochdale	4	1	—	1	—	6	—	—	—	—	—	*30*	—	*7*	—
Rotherham	5	1	2	—	—	8	—	—	1	—	1	*31*	—	*10*	*13*
St. Helens	6	5	1	—	—	12	—	—	—	—	—	*41*	—	*11*	—
Salford	23	15	5	2	—	45	2	1	1	1	5	95	*75*	26	*29*
Sheffield	30	28	18	18	—	94	1	—	2	1	4	51	*9*	18	*8*
Smethwick...	7	7	2	5	—	21	1	1	—	—	2	*82*	*117*	28	*26*
Southampton	18	19	10	8	—	55	1	3	1	2	7	92	*99*	32	*41*
Southend-on-Sea	6	12	3	4	—	25	—	—	—	—	—	*61*	—	17	—
Southport	2	3	—	3	—	8	—	—	—	1	1	*35*	—	*9*	*12*
South Shields	9	3	1	2	—	15	—	—	—	2	2	*49*	—	*15*	*20*
Stockport	1	7	2	1	—	11	1	1	1	2	5	*28*	*69*	*8*	*36*
Stoke on Trent	24	11	3	1	—	39	—	—	—	1	1	54	—	14	*4*
Sunderland	34	19	5	4	—	62	3	3	3	1	10	115	*130*	35	*57*
Tynemouth	4	1	1	2	—	8	—	—	—	—	—	*33*	—	*13*	—
Wakefield	12	1	—	—	—	13	—	1	—	—	1	*98*	*76*	*23*	*17*
Wallasey	—	2	2	1	—	5	—	—	1	—	1	*9*	—	*5*	*10*
Walsall	6	6	3	5	—	20	—	—	2	—	2	*43*	—	18	*18*
Warrington	20	6	—	—	—	26	2	—	—	—	2	142	*109*	34	*26*
West Bromwich	3	—	2	1	—	6	—	—	1	—	1	*14*	—	*7*	*12*
West Ham	8	7	—	—	—	15	—	—	—	—	—	*36*	—	*9*	—
West Hartlepool	6	—	—	—	1	7	2	—	—	—	2	*33*	*111*	*10*	*29*
Wigan	17	4	2	1	—	24	1	1	1	—	3	110	*105*	29	*36*
Wolverhampton	8	7	1	1	—	17	1	—	—	—	1	*40*	*27*	*11*	*6*
Worcester	1	1	2	1	—	5	—	—	—	—	—	*15*	—	*8*	
York	2	1	2	1	—	6	—	—	1	—	1	*13*	—	*6*	*10*

Table LXXIX—(*contd.*)

Area		Number of corrected notifications						Number of deaths					Under 15		All ages	
		0–	5–	15–	25 and over	Age not known	All Ages	0–	5–	15–	25 and over	All Ages	Notifications per 100,000	Deaths per million	Notifications per 100,000	Deaths per million
County Boroughs—*contd.*																
Cardiff		9	10	8	4	—	31	—	—	—	2	2	*37*	—	13	*9*
Merthyr Tydfil		1	3	—	—	—	4	—	—	—	—	—	*31*	—	*7*	—
Newport, Mon.		8	2	—	1	—	11	2	—	—	—	2	*43*	*85*	*11*	*20*
Swansea		14	10	—	6	—	30	1	—	—	1	2	71	*29*	20	*13*
Admin. Counties :																
Bedfordshire ...	U.D.	27	30	7	11	—	75	2	3	2	4	11	127	*111*	37	*54*
	R.D.	2	13	1	3	—	19	—	3	1	2	6	*80*	*160*	*22*	*69*
Berkshire	U.D.	4	7	4	3	—	18	1	—	1	1	3	*55*	*50*	*20*	*33*
	R.D.	11	14	5	6	—	36	—	—	2	2	4	64	—	20	*22*
Buckinghamshire ...	U.D.	6	5	3	9	—	23	—	—	—	3	3	*28*	—	12	*16*
	R.D.	3	7	2	4	1	17	—	—	1	—	1	*27*	—	*10*	*6*
Cambridgeshire ...	U.D.	4	3	—	1	—	8	—	—	—	—	—	*45*	—	*10*	—
	R.D.	—	5	1	1	—	7	—	—	—	—	—	*31*	—	*9*	—
Cheshire	U.D.	31	35	14	12	—	92	—	4	2	7	13	52	*31*	15	*21*
	R.D.	18	27	10	9	—	64	—	—	4	2	6	130	—	38	*36*
Cornwall	U.D.	8	6	2	6	2	24	1	—	—	1	2	*37*	*27*	13	*11*
	R.D.	2	3	3	3	1	12	—	—	2	—	2	*16*	—	*8*	*14*
Cumberland ...	U.D.	6	6	4	3	—	19	—	—	—	1	1	*62*	—	*23*	*12*
	R.D.	12	24	9	8	—	53	1	—	4	1	6	127	*35*	43	*49*
Derbyshire ...	U.D.	16	20	4	10	—	50	2	1	2	2	7	46	*38*	14	*20*
	R.D.	11	15	14	5	6	51	—	1	3	2	6	36	*14*	16	*19*
Devonshire... ...	U.D.	6	10	5	3	—	24	—	—	—	—	—	*33*	—	9	—
	R.D.	6	12	6	2	5	31	—	—	—	1	1	*37*	—	13	*4*
Dorsetshire ...	U.D.	9	12	11	8	—	40	1	—	1	—	2	58	*27*	24	*12*
	R.D.	2	20	1	3	—	26	—	2	—	1	3	107	*98*	27	*31*
Durham	U.D.	98	47	13	13	—	171	7	7	1	1	16	99	*95*	28	*26*
	R.D.	27	21	10	1	4	63	1	1	2	1	5	73	*30*	23	*18*
(*1*)		(*2*)	(*3*)	(*4*)	(*5*)	(*6*)	(*7*)	(*8*)	(*9*)	(*10*)	(*11*)	(*12*)	(*13*)	(*14*)	(*15*)	(*16*)

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Admin. Counties—*contd.*																
Ely, Isle of... ...	U.D.	—	2	—	—	—	2	—	—	1	—	1	*17*	—	*4*	*19*
	R.D.	—	—	1	—	—	1	—	—	—	—	—	—	—	*3*	—
Essex	U.D.	43	73	33	30	—	179	1	7	3	8	19	41	*28*	14	*15*
	R.D.	5	16	9	11	—	41	—	2	1	3	6	47	*45*	19	*28*
Gloucestershire ...	U.D.	3	8	3	5	—	19	—	—	—	1	1	*36*	—	*14*	*7*
	R.D.	11	17	16	8	—	52	—	—	—	1	1	45	—	19	*4*
Herefordshire ...	U.D.	2	5	3	3	—	13	—	—	—	—	—	*64*	—	*26*	—
	R.D.	7	8	8	5	—	28	—	—	1	—	1	*92*	—	39	*14*
Hertfordshire ...	U.D.	22	43	9	17	—	91	1	5	1	2	9	72	*66*	22	*21*
	R.D.	7	15	6	9	—	37	—	2	2	1	5	69	*62*	24	*32*
Huntingdonshire ...	U.D.	1	3	—	1	—	5	—	—	—	—	—	*61*	—	*18*	—
	R.D.	1	1	—	—	—	2	—	—	—	—	—	*29*	—	*6*	—
Kent	U.D.	52	96	54	42	1	245	5	9	6	14	34	58	*55*	21	30
	R.D.	14	17	9	10	5	55	2	1	2	1	6	47	*45*	18	*20*
Lancashire... ...	U.D.	169	99	23	31	—	322	12	9	4	5	30	75	59	19	18
	R.D.	18	21	5	8	1	53	1	1	1	3	6	66	*34*	19	*21*
Leicestershire ...	U.D.	2	6	1	4	—	13	—	1	—	—	1	*22*	*28*	*8*	*6*
	R.D.	3	8	1	2	—	14	—	1	—	—	1	*28*	*26*	*8*	*6*
Lincs., Holland ...	U.D.	3	8	—	—	—	11	—	—	—	—	—	*127*	—	*29*	—
	R.D.	10	18	6	6	—	40	—	1	2	—	3	190	*68*	68	*51*
Lincs., Kesteven ...	U.D.	—	9	2	3	—	14	—	1	1	—	2	*88*	*98*	*31*	*45*
	R.D.	5	6	1	4	—	16	1	1	—	1	3	*69*	*126*	*23*	*42*
Lincs., Lindsey ...	U.D.	8	9	4	8	1	30	—	1	—	4	5	*51*	*30*	21	*35*
	R.D.	5	19	9	12	—	45	1	1	—	4	6	72	*60*	31	*42*
London	... ...	206	272	126	117	—	721	9	12	12	16	49	77	34	22	15
Middlesex	U.D.	105	159	76	63	—	403	3	13	6	9	31	57	*34*	18	14
Norfolk	U.D.	—	7	3	1	—	11	—	—	—	—	—	*47*	—	*16*	—
	R.D.	2	11	10	8	—	31	—	1	2	1	4	*21*	*16*	11	*15*
Northamptonshire	U.D.	1	1	4	2	—	8	—	—	—	1	1	*7*	—	*6*	*8*
	R.D.	2	6	2	4	—	14	—	—	1	—	1	*32*	—	*12*	*9*
Northumberland ...	U.D.	28	19	6	4	17	74	1	5	1	2	9	64	*82*	23	*28*
	R.D.	4	14	6	4	1	29	1	—	1	—	2	*89*	*50*	29	*20*
Nottinghamshire ...	U.D.	18	14	7	6	—	45	3	1	—	1	5	39	*48*	13	*14*
	R.D.	9	7	2	5	—	23	—	3	—	2	5	*47*	*88*	15	*34*

Table LXXIX—(*contd.*)

Area		Number of corrected notifications						Number of deaths					Under 15		All ages	
		0–	5–	15–	25 and over	Age not known	All Ages	0–	5–	15–	25 and over	All Ages	Notifications per 100,000	Deaths per million	Notifications per 100,000	Deaths per million
Admin. Counties—*contd.*																
Oxfordshire ...	U.D.	2	6	3	—	—	11	1	—	—	—	1	*78*	*97*	*24*	*22*
	R.D.	4	7	2	7	—	20	—	1	—	4	5	*47*	*42*	18	*46*
Peterborough, Soke of	U.D.	—	—	—	1	—	1	—	—	—	1	1	—	—	*2*	*20*
	R.D.	1	1	—	1	—	3	—	—	—	—	—	*104*	—	*35*	—
Rutland	U.D.	—	—	1	—	—	1	—	—	—	—	—	—	—	*28*	—
	R.D.	1	1	—	—	—	2	—	—	—	—	—	*60*	—	*13*	—
Shropshire	U.D.	6	6	3	2	—	17	—	—	—	—	—	*39*	—	*13*	—
	R.D.	3	9	2	—	—	14	—	1	—	1	2	*40*	*33*	*11*	*15*
Somersetshire ...	U.D.	4	8	3	5	—	20	—	—	—	—	—	*27*	—	9	—
	R.D.	8	18	3	9	4	42	1	—	—	—	1	51	*20*	18	*4*
Southampton ...	U.D.	13	17	8	11	—	49	1	2	—	1	4	41	*41*	16	*13*
	R.D.	11	18	12	10	—	51	1	—	—	3	4	53	*18*	21	*17*
Staffordshire ...	U.D.	17	32	7	14	1	71	3	1	—	1	5	33	*27*	12	*8*
	R.D.	15	11	5	7	—	38	—	—	3	4	7	57	—	19	*35*
Suffolk, East ...	U.D.	1	5	2	3	—	11	—	—	—	—	—	*29*	—	*12*	—
	R.D.	4	8	5	4	—	21	—	1	—	—	1	*48*	*40*	19	*9*
Suffolk, West ...	U.D.	1	4	1	3	—	9	1	—	—	1	2	*58*	*116*	*22*	*49*
	R.D.	2	2	—	1	—	5	—	—	—	—	—	*27*	—	*7*	—
Surrey	U.D.	61	104	46	56	1	268	7	7	—	12	26	69	*59*	23	22
	R.D.	21	29	11	11	4	76	3	—	—	3	6	173	*104*	55	*44*
Sussex, East ...	U.D.	6	15	5	6	—	32	—	1	1	1	3	67	*32*	19	*17*
	R.D.	11	14	14	15	—	54	1	—	—	—	1	83	*33*	36	*7*
Sussex, West ...	U.D.	5	20	4	7	—	36	—	1	1	3	5	79	*31*	22	*31*
	R.D.	2	9	2	7	—	20	—	—	1	2	3	*38*	—	15	*22*
Warwickshire ...	U.D.	27	37	13	17	—	94	—	2	3	3	8	93	*29*	31	*26*
	R.D.	9	14	6	9	—	38	1	—	—	1	2	64	*28*	24	*13*
Westmorland ...	U.D.	3	2	—	1	—	6	—	—	—	1	1	*77*	—	*19*	*32*
	R.D.	4	8	5	4	—	21	—	1	—	—	1	*162*	*135*	61	*29*
Wight, I. of ...	U.D.	7	14	9	4	—	34	—	—	—	1	1	139	—	46	*13*
	R.D.	2	4	3	2	—	11	—	—	—	—	—	*185*	—	*66*	—
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Admin. Counties—*contd.*																
Wiltshire	U.D.	3	7	2	7	2	21	1	—	—	1	2	27	27	12	12
	R.D.	9	8	3	6	3	29	1	—	1	1	3	45	27	17	18
Worcestershire ...	U.D.	5	18	6	4	—	33	—	1	1	1	3	38	16	12	11
	R.D.	9	6	9	4	—	28	1	—	—	—	1	61	41	26	9
Yorkshire, E.R. ...	U.D.	9	14	5	4	1	33	—	—	1	—	1	107	—	33	10
	R.D.	4	15	6	5	—	30	—	1	—	1	2	85	45	30	20
Yorkshire, N.R. ...	U.D.	3	8	2	4	—	17	—	1	1	—	2	24	22	9	10
	R.D.	14	23	3	9	4	53	2	2	1	4	9	113	122	35	60
Yorkshire, W.R. ...	U.D.	111	67	37	54	2	271	5	5	5	8	23	72	41	24	20
	R.D.	36	29	21	16	1	103	3	2	5	2	12	69	53	26	30
Anglesey	U.D.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	R.D.	1	—	—	—	1	2	—	—	—	—	—	15	—	7	—
Brecknockshire ...	U.D.	—	—	1	3	—	4	—	—	—	1	1	—	—	25	64
	R.D.	3	1	1	—	—	5	1	1	—	—	2	46	231	13	53
Caernarvonshire ...	U.D.	2	3	1	1	—	7	—	1	1	—	2	36	73	10	28
	R.D.	—	—	—	1	—	1	—	—	—	—	—	—	—	2	—
Cardiganshire ...	U.D.	—	2	1	2	1	6	—	1	—	—	1	61	304	34	56
	R.D.	1	1	1	—	—	3	—	—	—	—	—	29	—	9	—
Carmarthenshire ...	U.D.	6	10	4	2	1	23	—	1	—	—	1	112	70	32	14
	R.D.	9	5	5	5	—	24	—	—	—	—	—	68	—	25	—
Denbighshire ...	U.D.	2	1	5	3	—	11	1	—	1	—	2	20	67	14	26
	R.D.	4	3	—	3	1	11	1	—	—	—	1	34	49	12	11
Flintshire	U.D.	10	7	—	4	—	21	1	—	—	4	5	108	64	30	72
	R.D.	3	6	—	1	—	10	—	1	—	—	1	59	66	15	15
Glamorganshire ...	U.D.	33	15	8	6	—	62	—	—	—	2	2	39	—	12	4
	R.D.	17	11	1	3	—	32	—	1	1	—	2	64	23	17	11
Merionethshire ...	U.D.	—	—	1	2	—	3	—	—	—	—	—	—	—	18	—
	R.D.	1	1	1	1	—	4	—	—	—	—	—	44	—	19	—
Monmouthshire ...	U.D.	4	5	3	3	4	19	1	1	1	1	4	14	31	7	15
	R.D.	—	4	3	4	—	11	—	—	—	1	1	43	—	26	24
Montgomeryshire ...	U.D.	1	—	—	—	1	2	—	—	—	—	—	28	—	12	—
	R.D.	2	5	2	4	—	13	—	—	—	—	—	113	—	47	—
Pembrokeshire ...	U.D.	3	1	—	—	1	5	—	—	—	—	—	41	—	12	—
	R.D.	—	2	2	1	—	5	—	—	—	—	—	21	—	11	—
Radnorshire ...	U.D.	—	—	—	—	2	2	—	—	—	—	—	—	—	32	—
	R.D	—	3	2	2	1	8	—	—	—	1	1	99	—	60	74

The death rate under 15 was highest in North I (65) followed by South East excluding Greater London (43) and was lowest in South West (15) and Midland I (17). At all ages mortality was highest in North II (25) and the South East excluding Greater London (24) and again lowest in the South West (8), Midland I (11) and Wales I (11). As regards the density aggregates, at ages under 15 mortality was highest in the aggregate of urban districts other than county boroughs, but at all ages it was highest in the rural districts. In both cases the county boroughs had the lowest rates.

The county boroughs with the highest notification and death rates were as follows, the rates being shown in parenthesis :—

Under 15		All ages	
Notifications	Deaths	Notifications	Deaths
Hastings (192)	Barrow-in-Furness (205)	Hastings (49)	Burton upon Trent (63)
Barrow-in-Furness (143)	Stoke on Trent (130)	Grimsby (40)	Barrow-in-Furness (51)
Warrington (142)	Smethwick (117)	Barrow-in-Furness (38)	Sunderland (57)
Sunderland (115)	West Hartlepool (111)	Sunderland (35)	Southampton (41)
Wigan (110)	Warrington (109)	Warrington (34)	Bolton, Stockport, Wigan (36)
Grimsby (104)	Wigan (105)	Bradford, Southampton (32)	

None of the county boroughs was without any notifications in the year, but in 20 of them there were no deaths.

Administrative counties whose aggregated urban districts had the highest notification and death rates were as follows :—

Under 15.		All ages	
Notifications	Deaths	Notifications	Deaths
Isle of Wight (139)	Cardiganshire (304)	Isle of Wight (46)	Flintshire (72)
Bedfordshire, Lincolnshire (Holland) (127)	West Suffolk (116)	Bedfordshire (37)	Brecknockshire (64)
Carmarthenshire (112)	Bedfordshire (111)	Cardiganshire (34)	Cardiganshire (56)
Flintshire (108)	Lincolnshire (Kesteven) (98)	Yorkshire, E.R. (33)	Bedfordshire (54)
Yorkshire, E.R. (107)	Oxfordshire (97)	Carmarthenshire, Radnorshire (32)	W. Suffolk (49)
	Durham (95)		Lincolnshire (Kesteven) (45)

Similarly, the administrative counties whose aggregated rural districts gave the highest rates were as follows :—

Under 15		All ages	
Notifications	Deaths	Notifications	Deaths
Lincolnshire (Holland) (190)	Brecknockshire (231)	Lincolnshire (Holland) (68)	Radnorshire (74)
Isle of Wight (185)	Bedfordshire (160)	Isle of Wight (66)	Bedfordshire (69)
Surrey (173)	Westmorland (135)	Westmorland (61)	Yorkshire, N.R. (60)
Westmorland (162)	Lincolnshire (Kesteven) (126)	Radnorshire (60)	Brecknockshire (53)
Cheshire (130)	Yorkshire, N.R. (122)	Surrey (55)	Lincolnshire (Holland) (51)
Cumberland (127)	Surrey (104)	Montgomeryshire (47)	Cumberland (49)

Table LXXX gives the notification, death and fatality rates in 1947 by sex and age, and by density aggregates for the country as a whole, distinguishing Greater London. The aggregates with the highest and lowest rates at three separate age groups for each sex are given in the following table (see also diagram on page 138) :—

		0–	5–	15 and over
		Notifications		
Highest	Male	Urban Districts (77)	Greater London (80)	Rural Districts (11)
	Female	Urban Districts (68)	Greater London (54)	Greater London (9)
Lowest	Male	County Boroughs (70)	County Boroughs (41)	County Boroughs, Urban Districts (7)
	Female	Greater London (53)	County Boroughs (32)	County Boroughs, Urban Districts (6)
		Deaths		
Highest	Male	Urban Districts (55)	Greater London (55)	Rural Districts (24)
	Female	Urban Districts (38)	Rural Districts (30)	Urban Districts, Rural Districts (10)
Lowest	Male	Greater London (26)	County Boroughs (19)	County Boroughs (11)
	Female	Greater London, County Boroughs (27)	County Boroughs (14)	Greater London (8)
		Fatality		
Highest	Male	Urban Districts (7·2)	Urban Districts (9·1)	Rural Districts (21·1)
	Female	Urban Districts (5·6)	Urban Districts (7·1)	Urban Districts (15·7)
Lowest	Male	Greater London (3·5)	Rural Districts (4·2)	Greater London (13·7)
	Female	County Boroughs (4·5)	County Boroughs (4·4)	Greater London (9·4)

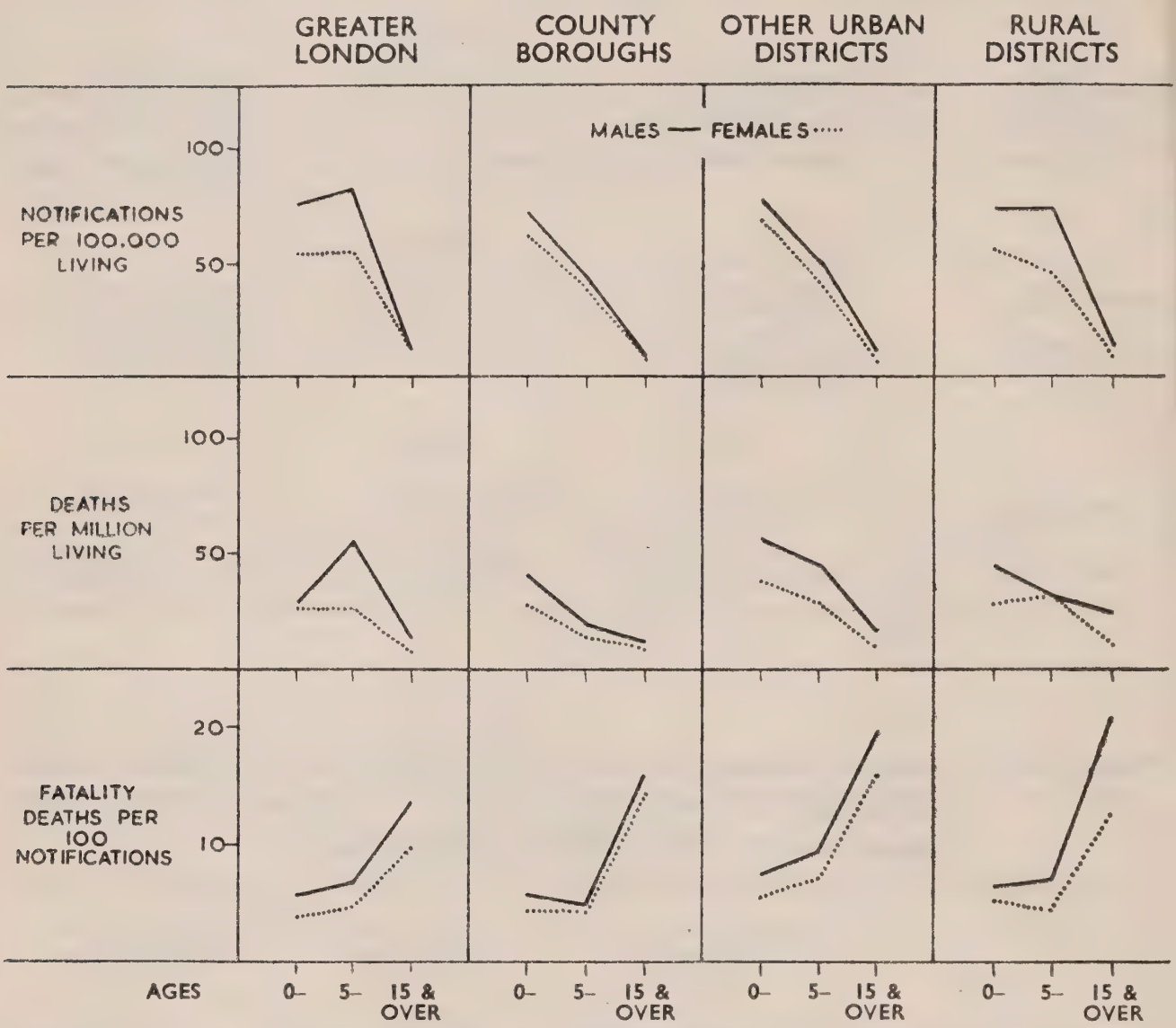
Table LXXX.—Acute Poliomyelitis and Polioencephalitis : Notification, Death and Fatality Rates by Sex and Age in England and Wales and Classes of Area, 1947 (excluding non-civilians).

Area		Notifications* per 100,000 living			Deaths per million living			Deaths per 100 Notifications		
		0–	5–	15 and over	0–	5–	15 and over	0–	5–	15 and over
Greater London...	M.	74	80	9	26	55	13	3·5	6·8	13·7
	F.	53	54	9	27	25	8	5·2	4·6	9·4
County Boroughs	M.	70	41	7	40	19	11	5·7	4·7	16·0
	F.	60	32	6	27	14	9	4·5	4·4	14·5
Other Urban Districts	M.	77	50	7	55	45	15	7·2	9·1	20·0
	F.	68	40	6	38	28	10	5·6	7·1	15·7
Rural Districts ...	M.	72	71	11	44	30	24	6·1	4·2	21·1
	F.	55	45	8	28	30	10	5·1	6·8	12·4
England and Wales	**M.**	**73**	**56**	**8**	**43**	**36**	**15**	**5·8**	**6·4**	**17·9**
	F.	**60**	**41**	**7**	**31**	**24**	**9**	**5·1**	**5·8**	**13·1**

* Corrected for diagnosis revision.

In the county boroughs and other urban districts the notification rates of both sexes were highest at 0–4, but in Greater London ages 5–14 had the highest rate. Each of the death rates at 5–14 was lower than at 0–4 with the single exception of that for males in Greater London.

Poliomyelitis : Notification, death and fatality rates. England & Wales, 1947.



37. Acute Infectious Encephalitis (Lethargic or Epidemic).—Table LXXXI gives the numbers of notifications and deaths in each year since 1931, and distinguishes between deaths resulting from sequelæ and from the acute stage of the disease from 1939 onwards. This distinction cannot always be made from the information provided on the death certificate, and in 1939 more than half of the deaths had to be allocated to the group described as unspecified. The proportion has steadily diminished since then, and in 1946 and 1947 it was possible to allocate more than three-quarters of the deaths either to the group of delayed or of more immediate deaths.

During the years 1935–39 the total deaths averaged 568 per year, and during 1940–45, 566 per year, varying in individual years from 729 in 1940 to 417 in 1944. In 1946 and 1947 there were 437 and 426 deaths respectively. In 1946, 33 deaths were distinguished as due to the acute form and 314 as delayed, while in 1947 the number in the acute group increased to 73 and the delayed deaths dropped to 259. The number of corrected notifications in 1947 was 68. As this figure was exceeded by the deaths assigned as acute, quite apart from an unknown number included in the undefined group, it must be concluded either that notifications were deficient or that the basis on which deaths were distinguished was unreliable. The fact that in the four years 1944 to 1947 there were 64 deaths at ages under 5 and only 42 cases notified at those ages indicates either that many cases escape notification or that the nomenclature used on death certificates results in overstatement of deaths from the disease.

Table LXXXI.—Acute Infectious Encephalitis: Notifications and Deaths.* 1931 to 1947.

Year	No. of Notifications	No. of deaths			
		Acute form	Sequelæ	Unspecified	Total
1931	654	?	?	?	771
1932	564	?	?	?	662
1933	432	?	?	?	654
1934	411	?	?	?	632
1935	329	?	?	?	579
1936	269	?	?	?	574
1937	217	?	?	?	599
1938	194	?	?	?	516
1939	159	37	223	312	572
1940	211	49	356	324	729
1941	191	36	363	305	704
1942	148	29	330	231	590
1943	109	20	304	171	495
1944	(*a*) 88 (*b*) 79	14	244	159	417
1945	(*a*) 93 (*b*) 76	32	288	141	461
1946	(*a*) 90 (*b*) 78	33	314	90	437
1947	(*a*) 84 (*b*) 68	73	259	94	426

* Deaths are corrected to 1940 Classification.

(*a*) Original notifications. (*b*) Corrected for diagnosis revision.

The distributions of corrected notifications and of deaths in 1946–47 by sex and age were as follows :—

		0–	5–	15–	45–	65 and over	Age not known	All ages
Corrected Notifications	Males	17	18	26	14	7	—	82
	Females	8	10	24	15	6	1	64
Deaths ...	Males	20	13	157	160	85	—	435
	Females	24	7	147	155	95	—	428
Ratio of Deaths to Notifications (both sexes) ...		1·76	0·71	6·08	10·86	13·85	—	5·91

The increasing ratio of deaths to notifications as age advances reflects the greater proportion of deaths due to the late results of the disease among older than among younger persons.

44b. Hodgkin's Disease (Pernicious Lymphogranulomatosis).—Although classified within the International List (5th Revision) as an infective disease, this condition is now generally regarded as a form of malignant neoplasm affecting lymphatic tissues, and will be so classified at the next revision of the List. Deaths averaged 538 annually both in 1931–35 and 1936–39 and 592 in 1940–45. In 1946 and 1947 there were 662 and 649 deaths respectively. Table LXXXII gives the mean annual death rates by sex and age at periods from 1911–20 to 1947 (including deaths of non-civilians). The crude death rate at

all ages and the equivalent average death rate at ages 0–64 showed a progressive rise up to 1946, the male rate being about double the female rate throughout. For each sex death rates in 1946 and 1947 were lowest in childhood, and highest at 65–74. Among females the death rate at ages 25–34 exceeded that at 35–44 in both years as it had done in 1943–45, and in 1947 it also exceeded the rate at 45–54 ; this curious break in the otherwise regular increase of mortality with advancing age may be of significance.

Table LXXXII.—Hodgkin's Disease : Death Rates by Sex and Age.* 1911-20, 1921-30, 1931-39, 1940-42, 1943-45, 1946, 1947.

Ages	Mean annual death rates per million living													
	1911–20		1921–30		1931–39		1940–42		1943–45		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
All ages, crude ...	**10·2**	**5·4**	**14·1**	**7·3**	**17·6**	**9·2**	**17·8**	**9·6**	**18·9**	**10·5**	**21·0**	**10·4**	**20·3**	**10·2**
Ages 0–64, E.A.D.R.	10·8	5·7	14·5	7·3	17·8	8·5	17·7	8·7	18·7	9·4	20·4	9·1	18·8	9·1
0– ...	6·6	2·4	6·8	2·5	7·3	2·2	6·1	2·0	4·5	1·7	3·8	2·3	4·9	1·8
15– ...	7·7	4·5	11·3	5·5	12·4	6·6	10·3	6·0	12·1	7·5	13·1	8·3	12·2	6·0
25– ...	9·1	4·2	12·4	6·5	16·7	9·1	17·5	8·7	19·2	11·9	23·8	11·7	21·4	12·4
35– ...	9·7	5·4	15·0	6·6	18·5	10·0	19·0	9·6	19·6	9·1	24·3	8·2	22·4	8·8
45– ...	13·7	7·7	18·1	8·9	23·8	10·8	24·4	12·6	25·8	12·2	31·5	11·9	21·1	11·8
55– ...	20·2	11·8	27·2	16·5	33·6	15·6	34·5	16·7	37·8	18·0	34·0	15·7	37·3	17·6
65– ...	28·8	13·5	34·2	18·8	33·5	20·1	33·3	18·7	36·6	20·6	37·8	24·4	47·8	19·9
75 and over	15·1	11·5	25·5	15·3	28·9	19·4	29·0	20·7	28·2	20·2	31·7	13·1	42·1	18·5

* Including deaths of non-civilians in England and Wales, and based upon mid-year populations before 1940 and total populations inclusive of armed forces at home and abroad in 1940–47. Rates prior to 1940 accord with the 1940 classification.

Table LXXXIII gives numbers of deaths and death rates by regions and classes of area in 1947. The distribution was very uniform, no statistical significance attaching to the apparently high male rate of 30 per million in Wales II, based, as it was, on only ten deaths.

Table LXXXIII.—Hodgkin's Disease : Numbers of Deaths and Death Rates per million living at all ages in Regions, 1947. (Civilians only).

Area	Number of Deaths registered		Rate per million living	
	M.	F.	M.	F.
England and Wales	**409**	**226**	**21**	**10**
Greater London	86	52	23	12
Remainder of South East ...	65	47	22	14
North I	26	11	24	10
North II	13	4	21	6
North III	34	19	20	10
North IV	54	32	19	10
Midland I	41	16	17	6
Midland II	26	12	21	9
East	16	10	17	10
South West	21	14	20	12
Wales I	17	5	19	5
Wales II	10	4	30	11
County Boroughs*	118	76	20	11
Other Urban Districts* ...	135	56	21	8
Rural Districts*...	70	42	19	11

* Excluding Greater London.

45-55. Cancer and Other Malignant Tumours.—Deaths from malignant neoplasms (excluding Hodgkin's disease and leukæmia which were not included in this section of the International List as used for 1940–49) numbered 75,771 in 1946 and 77,850 in 1947. In the five years 1941 to 1945 the totals were 69,227, 70,419, 72,155, 72,110, 74,291. The deaths in 1946 consisted of 37,471 deaths of males (including 351 non-civilians) and 38,300 deaths of females (including 13 non-civilians) ; and in 1947 there were 38,943 of males (including 195 non-civilians) and 38,907 of females (including six non-civilians). Of the total in the two years, 139,860 were classified to the carcinoma group as defined in the Review for 1940–45, Text, page 135, 5,332 to the sarcoma group (including lymphosarcoma), 1,268 to the glioma group and 7,161 to undefined cancer.

Table LXXXIV.—Cancer of all Sites : Death Rates per million living* by Sex and Age in 1936-39 and each year 1940 to 1947.

Ages	1936–39†	1940	1941	1942	1943	1944	1945	1946	1947
					Males				
All ages	**1,595**	**1,648**	**1,675**	**1,699**	**1,739**	**1,724**	**1,790**	**1,816**	**1,870**
Ages 0–64, E.A.D.R. ...	1,070	1,087	1,091	1,083	1,088	1,090	1,135	1,138	1,173
0–	49	49	61	42	51	37	48	42	63
5–	25	29	29	29	30	31	30	36	32
15–	58	54	50	53	55	60	54	59	67
25–	146	129	153	129	134	130	155	138	150
35–	469	493	505	507	501	508	517	525	548
45–	1,624	1,684	1,680	1,704	1,729	1,725	1,792	1,874	1,877
55–	4,610	4,650	4,647	4,596	4,597	4,610	4,803	4,743	4,918
65–	9,690	9,729	9,821	9,959	9,878	9,627	9,705	9,679	9,924
75 and over	14,346	14,714	14,248	13,815	14,199	13,528	13,585	14,181	14,535
					Females				
All ages	**1,601**	**1,645**	**1,643**	**1,664**	**1,687**	**1,676**	**1,699**	**1,732**	**1,750**
Ages 0–64, E.A.D.R. ...	1,065	1,053	1,045	1,045	1,039	1,029	1,011	1,021	1,003
0–	40	40	37	41	33	47	46	46	54
5–	21	22	26	27	24	23	27	22	18
15–	44	42	38	42	46	39	39	38	42
25–	161	164	175	169	174	165	165	159	159
35–	718	688	692	691	689	675	669	684	677
45–	2,012	2,018	2,010	1,975	1,960	1,958	1,900	1,929	1,891
55–	3,946	3,893	3,831	3,871	3,843	3,807	3,747	3,780	3,707
65–	7,022	7,071	6,833	6,871	6,762	6,588	6,645	6,720	6,676
75 and over	10,950	10,717	10,552	10,280	10,418	10,020	10,165	10,441	10,891

* Including deaths of non-civilians in England and Wales, and based upon mid-year populations in 1936–39 and total populations inclusive of Armed Forces at home and abroad in 1940–47.

† Rates for 1936–39 accord with the classification in use from 1940 onwards, the deaths being those regarded by the certifier as caused by cancer, defined as in the Fifth Revision of the International List.

Table LXXXV.—Cancer of All Sites : Mortality by Sex and Age in 1931-1935* and 1936-1939 per cent. of that in 1921-1930 ; and Mortality in each year 1940 to 1947 per cent. of that in 1936-1939.

Ages	Per cent. of rate in 1921–30		Per cent. of rate in 1936–39							
	1931–35	1936–39	1940	1941	1942	1943	1944	1945	1946	1947
					Males					
All ages	**120**	**127**	**103**	**105**	**107**	**109**	**108**	**112**	**114**	**117**
Ages 0–64 E.A.D.R. ...	102	102	102	102	101	102	102	106	106	110
0–	118	144	100	124	86	104	76	98	86	129
5–	116	132	116	116	116	120	124	120	144	128
15–	100	126	93	86	91	95	103	93	102	116
25–	106	130	88	105	88	92	89	106	95	103
35–	109	116	105	108	108	107	108	110	112	117
45–	103	102	104	103	105	106	106	110	115	116
55–	101	99	101	101	100	100	100	104	103	107
65–	110	106	100	101	103	102	99	100	100	102
75 and over	115	116	103	99	96	99	94	95	99	101
					Females					
All ages	**116**	**119**	**103**	**103**	**104**	**105**	**105**	**106**	**108**	**109**
Ages 0–64 E.A.D.R. ...	100	97	99	98	98	98	97	95	96	94
0–	116	129	100	93	103	83	118	115	115	135
5–	107	140	105	124	129	114	110	129	105	86
15–	115	129	95	86	95	105	89	89	86	95
25–	100	105	102	109	105	108	102	102	99	99
35–	100	97	96	96	96	96	94	93	95	94
45–	100	97	100	100	98	97	97	94	96	94
55–	100	95	99	97	98	97	96	95	96	94
65–	103	96	101	97	98	96	94	95	96	95
75 and over	109	103	98	96	94	95	92	93	95	99

* The rates used for 1931–35 are first corrected to accord with the classification in use from 1940 onwards. The rates used for 1936–47 are those in Table LXXXIV.

Table LXXXIV gives the death rates from cancer of all sites by sex and age in each year 1940 to 1947, and the mean annual rates in 1936–1939. The rates are based on the total populations inclusive of armed forces at home and abroad and are not, therefore, influenced by civilian selection. The numbers of deaths from cancer which occurred abroad, and were therefore omitted, are believed to have been too small to have any appreciable effect on the rates. Table LXXXV expresses the rates in the previous table in terms of the corresponding mean annual death rates in 1936–39 taken as a hundred, and also expresses the rates of 1931–35 and 1936–39 as percentages of those in 1921–30.

Crude death rates from cancer at all ages continued to rise for each sex, the increase amounting to nearly two per cent. annually for males and one per cent. for females ; but correction for effects of the progressive change in the age-structure of the population modifies the trend considerably. The civilian comparative mortality indices with 1938 as unit base were as follows :—

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males	1·000	0·983	1·010	1·013	1·012	1·022	1·006	1·024	1·018	1·047
Females ...	1·000	0·984	0·985	0·969	0·964	0·961	0·941	0·937	0·949	0·949
Persons ...	**1·000**	**0·985**	**1·002**	**0·994**	**0·992**	**0·994**	**0·975**	**0·982**	**0·986**	**0·998**

In 1946 and 1947 the index for females was five per cent. below 1938 level, whereas the male index averaged about three per cent. above. Taking both sexes together, the index reached its highest quinquennial value of 0·999 in 1931–35, and remained at 0·998 in 1936–40. During 1941–43 the C.M.I. averaged 0·993, and for 1944–46 it fell to 0·981, but in 1947 it was again 0·998.

The equivalent average death rates (E.A.D.R.) at ages under 65, being derived from the age-specific death rates in populations inclusive of non-civilians, are free from the disturbances caused by civilian selection. For *males* this rate in 1936–39 was two per cent. above that of 1921–30, and in 1940–44 it showed a further two per cent. increase. In 1945 and 1946 it was six per cent. above the level of 1936–39, and in 1947 the excess became ten per cent. Deaths at ages under 15 make no important contribution to total cancer mortality, numbering 205 of boys and 142 of girls in 1947, but the death rates have increased more rapidly at these ages than any other since 1921–30. At ages between 15 and 35 the low rates registered in some of the war years may have been due to some non-civilians dying of cancer abroad. At 35–54 males registered in 1947 about 16 per cent. increase compared with 1936–39, whereas at 55–64 the increase was seven per cent., and at ages over 65 there was little change.

Table LXXXVI.—Cancer of All Sites : Death Rates by Sex and Age from Sarcoma, Carcinoma and "Cancer" undefined, 1943-45, 1946 and 1947†.

Ages	Mean annual death rate per million living*								
	Sarcoma			Carcinoma			Cancer undefined		
	1943–45	1946	1947	1943–45	1946	1947	1943–45	1946	1947
	Males								
All ages	**69**	**70**	**74**	**1,561**	**1,639**	**1,688**	**105**	**91**	**90**
0–64 E.A.D.R.	61	61	65	961	1,001	1,030	63	54	57
0–	21	21	24	4	4	3	4	4	6
15–	28	32	35	19	18	21	4	5	5
25–	30	29	34	92	95	99	8	6	6
35–	48	44	55	413	432	442	27	27	24
45–	93	92	95	1,520	1,645	1,656	99	98	92
55–	166	168	165	4,199	4,313	4,471	268	225	234
65–	227	226	220	8,890	8,958	9,243	603	482	445
75 and over	220	252	256	12,690	13,216	13,520	843	713	753
	Females								
All ages	**52**	**52**	**54**	**1,526**	**1,588**	**1,611**	**99**	**81**	**73**
0–64 E.A.D.R.	42	42	41	915	921	909	58	46	40
0–	18	17	16	4	3	5	3	3	3
15–	16	17	16	18	15	19	3	3	3
25–	19	17	14	132	123	127	9	9	7
35–	32	35	31	597	603	602	36	32	30
45–	68	69	69	1,739	1,762	1,725	112	81	71
55–	111	109	115	3,453	3,478	3,426	215	172	144
65–	148	143	160	6,116	6,239	6,229	391	330	274
75 and over	161	170	174	9,404	9,776	10,216	629	491	497

* See note under Table LXXXIV.
† Gliomas are not shown in this table but are dealt with separately in Table XCIV.

For *females* the E.A.D.R. at ages under 65 has fallen gradually from the maximum level reached in 1921–35, during which period there was no consistent change. In 1936–39 a fall of three per cent. was registered; by 1944 the rate had declined by another three per cent., and by 1947 a total fall of nine per cent. had occurred from the plateau level of 1921–35. Up to 1936–39 the improvement was occurring only between ages 35 and 75, but by 1947 it had spread to all age groups except girls under five. Comparing 1947 with 1921–30 the greatest fall in mortality has occurred at 55–64 (11 per cent.).

Table LXXXVI gives the death rates by sex and age in 1946 and 1947, compared with 1943–45, from sarcoma and allied forms, carcinoma and allied forms and " cancer " undefined. Rates for undefined cancer continued to fall at ages over 25; amongst males they comprised about five per cent. of the total cancer death rate at each age over 45, and amongst females the proportion was about four per cent. The trends of the death rates for sarcoma and carcinoma showed no pronounced differences.

Cancer by Site.—Tables LXXXVII and LXXXVIII analyse cancer deaths (including those of non-civilians) in 1946 and 1947 according to the site of the primary neoplasm when that was known, or according to the part of the body affected by the neoplasm considered to have caused death if the primary site could not be ascertained. The sites distinguished are in greater detail than that provided by the international classification. Efforts continue to be made, with the co-operation of the certifying physicians and surgeons, to classify the deaths to the organs primarily affected. For some organs, especially the liver and lung, which are often affected secondarily to such a degree that the symptoms dominate any arising from the primarily affected organ, the primary neoplasm cannot always be located in the absence of an autopsy. It must be remembered that for considerable numbers of deaths certified as due to cancer the diagnosis has not been confirmed by autopsy, biopsy or operation, and that very precise definitions of the site (e.g., distinction of gall bladder from bile ducts) are vitiated by that fact. The book of death certificates requests, however, that the seat of primary occurrence should be stated in all cases where known. Death certificates should state the part of the organ affected when that is important for purposes of research; but in the case of cancer of the uterus, statistics are at present unsatisfactory because that information is often not given.

In Table LXXXVII details are given of the deaths according to histological grouping and site of the primary neoplasm, gliomas being dealt with separately (Table XCIV). The percentage distributions are based on the totals in the three groups designated sarcoma, carcinoma and undefined cancer. In 1940–42 the carcinoma group formed 90 per cent. of the total for males and 91 per cent. for females; and in 1947, the proportions were 91 and 93 per cent. respectively, undefined cancer having decreased from six per cent. for each sex to five and four per cent. respectively.

In Table LXXXVIII, full details of the deaths by site, sex and age are given for each year.

Table LXXXIX shows the trend of death rates from 1911–20 to 1947 at five age groups over 35, and the E.A.D.R. at ages under 35, for separate sites or groups of sites. As was pointed out in the Text for 1940–1945 study of standardized rates for cancer of particular sites at all ages combined has often obscured great differences in the changes taking place in death rates at different

periods of life, and these may be important when considering the causes underlying the trends. For example the rate for cancer of the pharynx amongst males aged 45–54 fell continuously from 25 per million in 1911–20 to 11 in 1946–47 ; at ages 55–64 it began to fall after 1931–35, at ages 65–74 after 1936–39 and at ages over 75 after 1940–44. Thus for a long period the death rate was falling at earlier ages whilst at the same time it was rising at later ages.

Some of the main features of the trend of death rates revealed in Table LXXXIX are mentioned below.

All Sites.—For males the equivalent average death rate at ages under 35, which has increased steadily from 57 per million in 1911–20 to 69 in 1940–44, averaged 76 in 1945–47 ; at 35–44 the rate, which had risen from 420 in 1921–30 to 517 in 1945, rose still further to 548 by 1947; at 45–54 the rate, which had fallen to 1,590 by 1936–39, then increased, reaching 1,877 in 1947 ; at 55–64 the rate, which fell slightly after 1921–30 to 4,583 in 1936–39, then increased, averaging 4,821 in 1945–47 ; at 65–74 the rate, which had remained about 9,800 since 1931, averaged 9,769 in 1945–47; at 75 and over the rate has varied around 14,000 since 1935.

Table LXXXVII(a).—Cancer of different Forms and Sites; Deaths* from Carcinoma, Sarcoma and Undefined Cancer, and per cent. of all Cancers by Sex, 1946.

International List No.	Site	Males						Females					
		Number of deaths			Percentage of all cancers			Number of deaths			Percentage of all cancers		
		Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. Cancer
	All sites	**33,807**	**1,446**	**1,876**	**91**	**4**	**5**	**35,105**	**1,158**	**1,797**	**92**	**3**	**5**
45a	Lips	183	—	8	96	—	4	17	1	—	94	6	—
45b	Tongue	572	2	30	95	0	5	121	—	2	98	—	2
45c	Mouth	196	—	8	96	—	4	37	—	2	95	—	5
	Tonsil	146	16	5	87	10	3	29	9	3	71	22	7
	Pharynx	301	16	10	92	5	3	113	8	8	88	6	6
	Jaw	174	34	19	77	15	8	89	21	7	76	18	6
	Others (2)	149	3	7	94	2	4	55	2	3	92	3	5
	Total	1,721	71	87	91	4	5	461	41	25	87	8	5
46a	Œsophagus	1,380	1	66	95	0	5	774	—	50	94	—	6
46b	Stomach	7,258	6	333	96	0	4	5,905	3	258	96	0	4
	Duodenum	36	—	4	90	—	10	24	—	1	96	—	4
	Small intestine	68	14	2	81	17	2	60	8	3	85	11	4
	Cæcum	324	2	10	96	1	3	430	—	19	96	—	4
	Hepatic and splenic flexures	147	—	15	91	—	9	158	—	5	97	—	3
46c	Sigmoid flexure	688	—	33	95	—	5	775	1	38	95	0	5
	Large intestine (colon)	3,321	3	121	96	0	4	4,260	2	157	96	0	4
	Other and undefined intestine	52	13	11	69	17	14	62	3	9	84	4	12
46d	Rectum (not anus)	3,688	4	150	96	0	4	2,374	—	91	96	—	4
46e	Liver	857	16	79	90	2	8	832	5	58	93	1	6
	Gall bladder and ducts	256	—	19	93	—	7	494	—	31	94	—	6
46f	Pancreas	1,307	—	46	97	—	3	1,170	—	50	96	—	4
46g	Peritoneum, mesentery, others	62	83	9	40	54	6	106	61	14	58	34	8
46h	Other and unspec. digve. organs	1	—	—	100	—	—	2	—	—	100	—	—
	Total	19,445	142	898	95	1	4	17,426	83	784	96	0	4
47a	Larynx, trachea	833	2	36	96	0	4	250	2	13	94	1	5
47b	Lung, bronchus, pleura	6,305	44	330	94	1	5	1,335	18	78	94	1	5
	Mediastinum	101	81	58	42	34	24	53	37	36	42	29	29
47c	Other and unspec. resp. organs	1	—	—	100	—	—	—	—	—	—	—	—
	Total	7,240	127	424	93	2	5	1,638	57	127	90	3	7

48a	Cervix uteri	—	—	—	—	—	—	1,728	1	40	98	0	2
48b	Corpus uteri	—	—	—	—	—	—	331	3	8	97	1	2
	Other and undef. uterus	—	—	—	—	—	—	1,985	76	116	92	3	5
	Total	—	—	—	—	—	—	4,044	80	164	94	2	4
49	Ovary and fallopian tube	—	—	—	—	—	—	1,921	19	148	92	1	7
	Vulva and vagina	—	—	—	—	—	—	388	12	9	95	3	2
	Other female genital organs ...	—	—	—	—	—	—	11	2	2	74	13	13
	Total	—	—	—	—	—	—	2,320	33	159	93	1	6
50	Breast	64	1	5	92	1	7	7,384	20	308	96	0	4
51a	Scrotum	44	—	3	94	—	6	—	—	—	—	—	—
51b	Prostate	2,419	10	159	94	0	6	—	—	—	—	—	—
51c	Testis	135	59	9	67	29	4	—	—	—	—	—	—
	Penis	123	1	4	96	1	3	—	—	—	—	—	—
	Others	—	—	—	—	—	—	—	—	—	—	—	—
	Total	2,721	70	175	92	2	6	—	—	—	—	—	—
52	Kidney	184	235	22	42	53	5	147	172	24	43	50	7
	Bladder, urethra, ureter	1,326	2	56	96	0	4	636	3	31	95	0	5
	Total	1,510	237	78	83	13	4	783	175	55	78	17	5
53	Skin (not scrotum)	444	87	9	82	16	2	330	87	10	78	20	2
54b, c	Brain, meninges	26	10	76	23	9	68	20	17	74	18	15	67
	Other nervous system (2)	9	11	2	41	50	9	6	10	5	29	47	24
	Total	35	21	78	26	16	58	26	27	79	20	20	60
55a	Adrenal glands	24	9	10	56	21	23	17	7	5	59	24	17
55b,	Ethmoid, nose	92	6	7	87	6	7	78	12	4	83	13	4
d : 1	Other bone (not jaw)	95	284	27	23	70	7	90	236	14	26	70	4
55c	Thyroid gland	62	1	5	92	1	7	203	3	17	91	1	8
55d : 2	Other and unspecified (3)	354	390	73	43	48	9	305	297	46	47	46	7
	Total	627	690	122	44	48	8	693	555	86	52	42	6

* Including deaths of non-civilians registered in England and Wales; (1) Including palate, cheek (internal surface), salivary glands, gums; (2) Includes retina and optic nerve, spinal cord, cauda equina, nerves and sympathetic system; (3) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc. In addition, there were 342 deaths of males and 240 of females from glioma—54a.

Table LXXXVII(b).—Cancer of different Forms and Sites; Deaths* from Carcinoma, Sarcoma, and Undefined Cancer, and per cent. of all Cancers by Sex, 1947.

International List No.	Site	Males						Females					
		Number of deaths			Percentage of all cancers			Number of deaths			Percentage of all cancers		
		Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. cancer	Carcinoma	Sarcoma	Undef. Cancer
	All sites	**35,138**	**1,535**	**1,867**	**91**	**4**	**5**	**35,810**	**1,193**	**1,621**	**93**	**3**	**4**
45a	Lips	148	—	2	99	—	1	19	—	—	100	—	—
45b	Tongue	580	1	36	94	0	6	128	—	7	95	—	5
45c	Mouth	193	—	10	95	—	5	35	—	3	92	—	8
	Tonsil	134	17	9	83	11	6	27	7	6	68	17	15
	Pharynx	298	15	13	91	5	4	113	8	9	87	6	7
	Jaw	166	29	12	80	14	6	73	21	2	76	22	2
	Others (1)	132	1	8	93	1	6	44	4	2	88	8	4
	Total	1,651	63	90	92	3	5	439	40	29	86	8	6
46a	Œsophagus	1,490	2	62	96	0	4	753	—	51	94	—	6
46b	Stomach	7,493	8	340	96	0	4	5,975	4	228	96	0	4
	Duodenum	41	—	2	95	—	5	37	—	—	100	—	—
46c	Small intestine	51	9	4	80	14	6	56	9	5	80	13	7
	Cæcum	333	2	13	95	1	4	449	4	16	96	1	3
	Hepatic and splenic flexures ...	144	—	4	97	—	3	152	—	3	98	—	2
	Sigmoid flexure	764	—	29	96	—	4	740	—	37	95	—	5
	Large intestine (colon)	3,273	5	112	97	0	3	4,410	—	133	97	—	3
	Other and undefined intestine ...	46	13	7	69	20	11	61	7	13	75	9	16
46d	Rectum	3,638	3	158	96	0	4	2,456	2	71	97	0	3
46e	Liver	813	11	65	92	1	7	758	6	79	90	1	9
	Gall bladder and ducts	261	—	3	99	—	1	505	—	27	95	—	5
46f	Pancreas	1,342	1	47	97	0	3	1,142	—	40	97	—	3
46g	Peritoneum, mesentery, others ...	50	72	10	38	54	8	146	78	8	63	34	3
46h	Other and unspec. digve. organs ...	4	—	—	100	—	—	2	—	1	67	—	33
	Total	19,743	126	856	95	1	4	17,642	110	712	95	1	4
47a	Larynx, trachea	767	3	28	96	0	4	280	1	8	97	0	3
47b	Lung, bronchus, pleura	7,216	45	345	94	1	5	1,530	20	70	95	1	4
	Mediastinum	106	81	51	45	34	21	43	39	28	40	35	25
47c	Other and unspec. resp. organs ...	—	—	—	—	—	—	—	—	—	—	—	—
	Total	8,089	129	424	94	1	5	1,853	60	106	92	3	5

48a	Cervix uteri	—	—	—	—	—	—	1,808	1	29	98	0	2
48b	Corpus uteri	—	—	—	—	—	—	323	—	9	97	—	3
	Other and undef. uterus	—	—	—	—	—	—	1,923	73	104	92	3	5
	Total	—	—	—	—	—	—	4,054	74	142	95	2	3
49	Ovary and fallopian tube	—	—	—	—	—	—	2,039	30	138	93	1	6
	Vulva and vagina	—	—	—	—	—	—	426	10	11	96	2	2
	Other female genital organs ...	—	—	—	—	—	—	7	—	—	100	—	—
	Total	—	—	—	—	—	—	2,472	40	149	92	2	6
50	Breast	70	—	—	100	—	—	7,457	19	262	97	0	3
51a	Scrotum	36	—	1	97	—	3	—	—	—	—	—	—
51b	Prostate	2,623	5	172	94	0	6	—	—	—	—	—	—
51c	Testis	122	60	7	64	32	4	—	—	—	—	—	—
	Penis	146	—	3	98	—	2	—	—	—	—	—	—
	Others	—	—	—	—	—	—	—	—	—	—	—	—
	Total	2,927	65	183	92	2	6	—	—	—	—	—	—
52	Kidney	188	274	35	38	55	7	145	179	26	41	52	7
	Bladder, urethra, ureter	1,348	4	65	95	0	5	620	—	31	95	—	5
	Total	1,536	278	100	80	15	5	765	179	57	76	18	6
53	Skin (not scrotum)	452	96	10	81	17	2	350	101	5	77	22	1
54b, c	Brain, meninges	27	22	100	18	15	67	17	12	64	18	13	69
	Other nervous systems (2)... ...	3	10	5	17	55	28	5	7	—	42	58	—
	Total	30	32	105	18	19	63	22	19	64	21	18	61
55a	Adrenal glands	18	8	9	51	23	26	14	10	7	45	32	23
55b, d : 1	Ethmoid, nose	80	10	6	84	10	6	70	11	5	81	13	6
	Other bone (not jaw)	87	296	19	22	73	5	85	217	12	27	69	4
55c	Thyroid gland	82	2	5	92	2	6	205	5	21	89	2	9
55d : 2	Other and unspecified (3)	373	430	60	43	50	7	382	308	50	51	42	7
	Total	640	746	99	43	50	7	756	551	95	54	39	7

* Including deaths of non-civilians registered in England and Wales; (1) Including palate, cheek (internal surface), salivary glands, gums; (2) Includes retina and optic nerve, spinal cord, cauda equina, nerves and sympathetic system; (3) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc. In addition, there were 403 deaths of males and 283 of females from glioma—54a.

Table LXXXVIII(a).—Cancer of different Forms and Sites : Deaths by Sex and Age (Including those of non-civilians registered in England and Wales), 1946.

Int. List No.	Form of Cancer and Site	Males (age l.b.d.)															
		All ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over
	All sites	**37,471**	**70**	**101**	**183**	**452**	**590**	**1,156**	**1,876**	**2,885**	**4,095**	**5,396**	**6,426**	**6,640**	**4,763**	**2,114**	**724**
	Carcinoma	33,807	7	9	55	310	461	977	1,635	2,545	3,685	4,946	5,921	6,172	4,439	1,980	665
	Lymphosarcoma, Reticulosarcoma ...	279	2	17	20	29	7	22	24	20	30	27	37	21	18	4	1
	Other sarcoma	1,167	43	34	79	66	54	64	82	107	143	136	144	103	73	27	12
	Glioma	342	11	32	14	27	32	38	44	54	43	30	11	6	—	—	—
	Cancer undefined	1,876	7	9	15	20	36	55	91	159	194	257	313	338	233	103	46
45a	Lips	191	—	—	—	1	1	—	3	3	15	17	21	37	48	25	20
45b	Tongue	604	—	—	—	3	—	4	6	16	31	77	117	154	123	51	22
45c	Mouth	204	—	—	—	—	1	2	1	6	9	16	41	60	30	27	11
	Tonsil	167	—	—	1	1	—	3	2	8	11	17	35	39	23	22	5
	Pharynx	327	—	2	1	6	2	6	11	18	32	40	60	72	54	15	8
	Jaw, sarcoma	34	2	2	1	—	1	4	1	1	1	4	7	3	5	1	1
	Jaw, other	193	1	—	—	—	1	2	3	5	12	22	41	46	40	17	3
	Others (1)	159	1	—	—	—	—	4	6	8	8	20	28	36	32	12	4
	Total	1,879	4	4	3	11	6	25	33	65	119	213	350	447	355	170	74
46a	Œsophagus	1,447	—	—	—	4	8	17	43	63	129	180	281	343	250	89	40
46b	Stomach	7,597	—	—	8	54	125	234	359	625	865	1,177	1,346	1,364	974	363	103
	Duodenum	40	—	—	—	—	2	1	2	3	8	7	4	8	2	2	1
46c	Small intestine	84	1	—	1	7	3	4	6	13	13	9	9	7	8	3	—
	Cæcum	336	—	1	2	7	3	7	18	16	40	39	43	68	58	28	6
	Hepatic flexure	162	—	—	2	3	1	4	4	9	14	16	35	36	31	7	—
	Splenic flexure																
	Sigmoid flexure	721	—	—	1	8	7	20	22	39	57	101	145	162	95	53	11
	Large intestine (colon)	3,445	—	1	2	33	50	72	116	169	255	438	581	758	580	281	109
	Other and undefined intestine... ...	76	—	2	3	3	4	—	3	4	7	8	14	14	10	4	—
46d	Rectum (not anus)	3,842	—	—	5	25	25	88	124	166	327	539	714	845	608	282	94
46e	Liver	952	2	—	2	12	10	19	46	76	94	120	178	192	116	62	23
	Gall baldder and ducts...	275	—	—	—	2	3	2	8	25	29	36	42	67	37	20	4
46f	Pancreas	1,353	—	—	4	2	13	30	61	114	146	205	246	246	159	84	43
46g	Peritoneum, mesentery, others ...	154	1	4	10	5	7	9	14	12	21	27	18	15	7	3	1
46h	Other and unspecified digestive organs	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
	Total	20,485	4	8	40	165	261	507	826	1,335	2,005	2,902	3,656	4,125	2,935	1,281	435

47a	Larynx, trachea	871	—	—	—	3	5	12	36	47	91	154	162	177	126	47	11
47b	Lung, bronchus, pleura	6,679	—	—	16	73	162	369	659	964	1,225	1,234	1,037	562	275	88	15
	Mediastinum	240	—	5	10	10	5	17	19	25	30	37	31	27	17	5	2
47c	Other and unspecified respiratory organs	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
	Total	7,791	—	5	26	86	172	398	714	1,036	1,347	1,425	1,230	766	418	140	28
50	Breast	70	—	—	—	1	2	2	3	13	3	10	14	11	7	4	—
51a	Scrotum	47	—	—	—	—	—	1	2	6	3	3	8	11	8	3	2
51b	Prostate	2,588	2	—	2	3	2	6	20	49	136	298	500	660	560	262	88
	Testis	203	3	1	25	60	23	19	16	13	7	6	11	6	8	4	1
51c	Penis	128	1	—	—	—	2	2	8	10	7	11	12	32	21	17	5
	Others	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	2,966	6	1	27	63	27	28	46	78	153	318	531	709	597	286	96
52	Kidney	441	23	4	4	9	14	13	29	48	69	58	68	54	42	5	1
	Bladder, urethra, ureter	1,384	—	—	—	5	14	36	45	90	143	196	271	263	199	96	26
	Total	1,825	23	4	4	14	28	49	74	138	212	254	339	317	241	101	27
53	Skin (not scrotum)	540	—	2	4	7	8	18	21	30	31	59	72	81	83	81	43
54a	Glioma of brain and nervous system (2)	342	11	32	14	27	32	38	44	54	43	30	11	6	—	—	—
54b, c	Other cancer of brain and meninges ...	112	1	6	4	9	7	10	18	22	15	8	11	—	1	—	—
	Other cancer of other nervous system (3)	22	3	—	—	2	4	1	—	2	3	1	1	4	1	—	—
	Total	476	15	38	18	38	43	49	62	78	61	39	23	10	2	—	—
55a	Adrenal glands	43	7	3	1	4	2	2	3	2	7	6	4	1	1	—	—
55b, d : 1	Ethmoid, nose	105	—	1	1	4	3	10	10	11	13	9	8	17	9	8	1
	Other bone (not jaw)	406	2	13	35	18	9	17	28	34	54	50	54	39	37	11	5
55c	Thyroid gland	68	—	—	—	1	—	4	9	2	5	8	12	14	9	—	4
55d : 2	Other and unspecified (4)	817	9	22	24	40	29	47	47	63	85	103	133	103	69	32	11
	Total	1,439	18	39	61	67	43	80	97	112	164	176	211	174	125	51	21

(1) Includes palate, cheek (internal surface), salivary glands, gums.
(2) Includes glioma of eye.
(3) Includes retina, optic nerve, spinal cord, cauda equina, nerves and sympathetic system.
(4) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc.

Table LXXXVIII(a).—Cancer of different Forms and Sites: Deaths by Sex and Age (Including those of non-civilians registered in England and Wales), 1946—*continued.*

Int. List No.	Form of Cancer and Site	Females (age l.b.d.)															
		All ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over
	All sites	**38,300**	**73**	**60**	**117**	**529**	**821**	**1,508**	**2,449**	**3,237**	**4,064**	**5,109**	**5,740**	**5,812**	**4,609**	**2,819**	**1,353**
	Carcinoma	35,105	6	7	46	411	701	1,352	2,230	2,963	3,728	4,714	5,339	5,386	4,316	2,640	1,266
	Lymphosarcoma, Reticulosarcoma	155	4	2	9	9	13	12	8	16	13	18	18	20	8	4	1
	Other sarcoma	1,003	45	22	44	47	44	51	80	99	107	126	106	102	63	46	21
	Glioma	240	11	23	9	31	23	25	24	27	26	24	10	4	1	1	1
	Cancer undefined	1,797	7	6	9	31	40	68	107	132	190	227	267	300	221	128	64
45a	Lips	18	1	—	—	—	—	—	—	—	2	2	1	1	4	6	1
45b	Tongue	123	—	—	—	—	1	3	5	8	12	11	25	24	13	15	6
	Mouth	39	—	—	—	—	1	—	—	3	4	6	1	4	12	7	1
	Tonsil	41	—	1	—	1	—	1	2	3	4	5	6	8	5	5	—
	Pharynx	129	—	1	3	4	1	4	7	14	12	22	24	14	13	9	1
45c	Jaw, sarcoma	20	—	—	1	2	1	—	—	1	2	2	—	3	3	4	1
	Jaw, other	97	—	—	—	—	1	2	2	7	12	10	8	21	17	14	3
	Others (1)	60	—	1	—	—	—	1	2	—	7	3	13	11	13	5	4
	Total	527	1	3	4	7	5	11	18	36	55	61	78	86	80	65	17
46a	Œsophagus	824	—	—	—	3	7	13	35	63	88	97	143	157	114	57	47
46b	Stomach	6,166	—	—	7	41	88	149	218	360	482	807	1,046	1,208	985	531	244
	Duodenum	25	—	—	—	—	1	—	2	1	3	3	4	3	6	2	—
	Small intestine	71	—	—	—	1	3	5	5	9	9	6	12	11	7	3	—
	Cæcum	449	—	—	1	4	6	8	10	17	47	61	59	85	80	49	22
	Hepatic flexure	163	—	—	—	3	2	8	8	7	15	15	33	27	22	12	11
46c	Splenic flexure																
	Sigmoid flexure	814	—	—	—	12	17	26	56	40	86	101	143	122	112	60	39
	Large intestine (colon)	4,419	—	1	9	32	44	100	150	223	317	505	633	846	777	545	237
	Other and undefined intestine	74	—	—	—	—	—	1	3	5	5	5	13	15	14	9	4
46d	Rectum (not anus)	2,465	—	—	3	30	34	57	112	170	201	337	422	407	355	240	97
46e	Liver	895	1	—	1	8	13	16	23	50	64	127	149	163	139	90	51
	Gall bladder and ducts	525	—	—	—	1	3	9	18	42	46	77	94	94	81	46	14
46f	Pancreas	1,220	—	—	—	1	11	34	45	66	129	179	210	246	167	89	43
46g	Peritoneum, mesentery, others	181	2	3	1	3	9	11	14	15	18	30	31	28	12	2	2
46h	Other and unspecified digestive organs	2	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—
	Total	18,293	3	4	22	139	238	437	699	1,068	1,510	2,350	2,993	3,412	2,872	1,735	811

47a	Larynx, trachea	265	—	—	—	4	6	9	30	19	36	46	33	39	26	10	7
47b	Lung, bronchus, pleura	1,431	—	1	8	24	47	66	99	127	182	228	247	202	127	49	24
	Mediastinum	126	3	2	5	7	6	4	12	9	10	20	19	12	11	5	1
47c	Other and unspecified respiratory organs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	1,822	3	3	13	35	59	79	141	155	228	294	299	253	164	64	32
48a	Cervix uteri	1,769	—	—	—	36	66	118	239	278	262	235	227	129	100	55	24
48b	Corpus uteri	342	—	—	—	4	1	12	15	47	48	55	49	60	26	19	6
	Other and undefined uterus	2,177	1	—	4	32	35	94	180	255	303	330	305	296	183	115	44
	Total	4,288	1	—	4	72	102	224	434	580	613	620	581	485	309	189	74
49	Ovary and Fallopian tube	2,088	—	2	10	63	75	137	223	300	327	305	270	196	119	47	14
	Vulva and vagina	409	1	—	—	7	5	7	10	29	35	56	70	73	49	40	27
	Other female genital organs	15	—	—	—	—	1	2	2	1	3	3	—	—	1	2	—
	Total	2,512	1	2	10	70	81	146	235	330	365	364	340	269	169	89	41
50	Breast	7,712	—	—	1	106	241	478	735	829	997	1,027	1,028	900	674	447	249
52	Kidney	343	24	5	4	6	6	14	19	29	34	50	42	50	33	17	10
	Bladder, urethra, ureter	670	—	—	—	4	4	9	23	36	48	95	118	128	117	63	25
	Total	1,013	24	5	4	10	10	23	42	65	82	145	160	178	150	80	35
53	Skin	427	1	—	2	6	9	12	8	15	25	39	47	63	70	78	52
54a	Glioma of brain and nervous system (2)	240	11	23	9	31	23	25	24	27	26	24	10	4	1	1	1
54b, c	Other cancer of brain and meninges ...	111	6	5	7	9	9	12	17	14	12	11	7	—	1	—	1
	Other cancer of other nervous system (3)	21	2	—	1	1	—	2	1	1	2	2	3	3	2	1	—
	Total	372	19	28	17	41	32	39	42	42	40	37	20	7	4	2	2
55a	Adrenal glands	29	5	2	—	2	1	1	2	4	4	3	1	2	2	—	—
55b, d : 1	Ethmoid, nose	94	—	—	3	—	4	2	9	7	10	12	14	8	6	14	5
	Other bone (not jaw)	340	9	12	21	14	12	11	27	26	34	45	43	38	25	18	5
55c	Thyroid gland	223	—	—	—	1	4	7	10	14	25	33	46	35	25	13	10
55d : 2	Other and unspecified (4)	648	6	1	16	26	23	38	47	66	76	79	90	76	59	25	20
	Total	1,334	20	15	40	43	44	59	95	117	149	172	194	159	117	70	40

(1) Includes palate, cheek (internal surface), salivary glands, gums.
(2) Includes glioma of eye.
(3) Includes retina, optic nerve, spinal cord, cauda equina, nerves and sympathetic system.
(4) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc.

Table LXXXVIII(b).—Cancer of different Forms and Sites: Deaths by Sex and Age (Including those of non-civilians registered in England and Wales), 1947.

Int. List No.	Form of Cancer and Site	Males (age l.b.d.)															
		All ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over
	All sites	**38,943**	**113**	**92**	**203**	**488**	**654**	**1,177**	**2,025**	**2,877**	**4,276**	**5,605**	**6,645**	**6,852**	**4,866**	**2,248**	**822**
	Carcinoma	35,138	7	5	64	322	499	980	1,777	2,548	3,852	5,131	6,199	6,372	4,535	2,094	753
	Lymphosarcoma, Reticulosarcoma	300	7	11	19	22	21	25	27	28	21	35	33	23	20	5	3
	Other sarcoma	1,235	55	40	87	90	65	74	88	106	129	146	120	123	65	36	11
	Glioma	403	27	24	19	36	38	49	42	46	65	32	16	6	3	—	—
	Cancer undefined	1,867	17	12	14	18	31	49	91	149	209	261	277	328	243	113	55
45a	Lips	150	—	—	—	—	—	—	4	5	3	8	26	36	29	27	12
45b	Tongue	617	—	—	—	1	2	5	8	22	37	62	110	159	128	65	18
45c	Mouth	203	—	—	—	3	—	—	2	4	12	16	38	53	45	21	9
	Tonsil	160	—	2	2	—	2	2	5	8	12	18	23	45	22	14	5
	Pharynx	326	—	1	2	3	5	7	11	19	36	39	71	54	54	20	4
	Jaw, sarcoma	29	1	1	4	1	1	2	—	3	2	2	3	4	3	—	2
	Jaw, other	178	—	—	—	1	2	2	5	4	18	13	32	43	32	20	6
	Others (1)	141	1	—	1	—	—	1	1	6	8	11	33	42	20	11	6
	Total	1,804	2	4	9	9	12	19	36	71	128	169	336	436	333	178	62
46a	Œsophagus	1,554	—	—	—	5	11	10	45	51	144	196	305	334	280	129	44
46b	Stomach	7,841	—	—	5	56	114	246	406	623	928	1,186	1,394	1,451	929	375	128
	Duodenum	43	—	—	—	—	2	2	4	3	7	8	11	2	1	—	3
	Small intestine	64	—	1	2	2	3	3	3	2	7	4	7	12	14	4	—
	Cæcum	348	—	—	2	7	6	12	19	21	35	50	54	56	58	19	9
46c	Hepatic flexure	148	—	—	2	2	5	2	6	4	13	19	31	28	24	7	5
	Splenic flexure																
	Sigmoid flexure	793	—	—	—	12	11	15	18	39	61	109	122	184	137	66	19
	Large intestine (colon)	3,390	—	—	7	26	45	58	100	156	263	385	615	739	607	280	109
	Other and undefined intestine	66	1	2	1	2	1	3	3	5	4	10	8	16	5	1	4
46d	Rectum (not anus)	3,799	—	—	6	36	37	81	123	183	309	518	720	790	629	271	96
46e	Liver	889	1	1	2	7	12	24	42	47	88	129	164	187	109	56	20
	Gall bladder and ducts	264	1	—	—	1	—	9	12	19	27	43	50	54	27	16	5
46f	Pancreas	1,390	—	—	1	20	16	45	52	97	163	204	270	243	172	77	30
46g	Peritoneum, mesentery, others	132	3	7	6	10	8	12	13	17	14	18	13	5	3	2	1
46h	Other and unspecified digestive organs	4	—	—	—	—	—	—	—	—	1	2	1	—	—	—	—
	Total	20,725	6	11	34	186	271	522	846	1,267	2,064	2,881	3,765	4,101	2,995	1,303	473

47a	Larynx, trachea	798	—	—	1	2	4	5	30	46	86	120	155	180	95	59	15
47b	Lung, bronchus, pleura	7,606	1	—	17	83	186	393	775	1,062	1,327	1,437	1,212	676	322	91	24
	Mediastinum	238	5	2	10	9	8	11	18	28	26	40	33	27	16	4	1
47c	Other and unspecified respiratory organs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	8,642	6	2	28	94	198	409	823	1,136	1,439	1,597	1,400	883	433	154	40
50	Breast	70	—	—	—	2	4	2	2	4	8	11	9	11	10	5	2
51a	Scrotum	37	—	—	—	1	—	—	2	1	3	6	5	6	9	4	—
51b	Prostate	2,800	1	—	—	—	3	3	23	43	134	315	480	742	607	336	113
	Testis	189	2	—	21	44	27	21	19	15	11	4	8	4	9	3	1
51c	Penis	149	—	—	—	—	2	3	4	8	11	19	24	35	25	14	4
	Others	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	3,175	3	—	21	45	32	27	48	67	159	344	517	787	650	357	118
52	Kidney	497	33	10	2	12	9	15	29	42	61	91	77	68	31	12	5
	Bladder, urethra, ureter	1,417	1	—	1	2	5	29	62	75	148	212	247	270	211	110	44
	Total	1,914	34	10	3	14	14	44	91	117	209	303	324	338	242	122	49
53	Skin (not scrotum)	558	1	—	5	19	7	15	21	21	34	59	71	92	89	71	53
54a	Glioma of brain and nervous system (2)	403	27	24	19	36	38	49	42	46	65	32	16	6	3	—	—
54b, c	Other cancer of brain and meninges ...	149	6	11	9	11	18	15	13	22	20	12	10	1	1	—	—
	Other cancer of other nervous system (3)	18	1	—	1	2	1	1	4	1	2	2	—	1	1	1	—
	Total	570	34	35	29	49	57	65	59	69	87	46	26	8	5	1	—
55a	Adrenal glands	35	7	4	1	1	—	2	2	6	—	4	3	2	2	1	—
55b, d : 1	Ethmoid, nose	96	1	1	3	3	3	3	7	7	9	16	12	18	4	6	3
	Other bone (not jaw)	402	7	14	44	28	16	16	24	35	37	48	53	36	32	9	3
55c	Thyroid gland	89	2	—	—	2	2	3	7	11	10	10	16	16	6	3	1
55d : 2	Other and unspecified (4)	863	10	11	26	36	38	50	59	66	92	117	113	124	65	38	18
	Total	1,485	27	30	74	70	59	74	99	125	148	195	197	196	109	57	25

(1) Includes palate, cheek (internal surface), salivary glands, gums.
(2) Includes glioma of eye.
(3) Includes retina, optic nerve, spinal cord, cauda equina, nerves and sympathetic system.
(4) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc.

Table LXXXVIII (b).—Cancer of different Forms and Sites: Deaths by Sex and Age (Including those of non-civilians registered in England and Wales), 1947—(*contd.*)

Int. List No.	Form of Cancer and Site	Females (age l.b.d.)															
		All ages	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over
	All sites	**38,907**	**92**	**50**	**127**	**527**	**788**	**1,521**	**2,436**	**3,190**	**4,148**	**4,912**	**5,824**	**5,893**	**4,905**	**3,049**	**1,445**
	Carcinoma	35,810	17	5	56	423	671	1,384	2,209	2,923	3,816	4,558	5,398	5,534	4,597	2,861	1,358
	Lymphosarcoma, Reticulosarcoma	175	5	3	4	9	6	5	7	18	36	15	24	26	13	3	1
	Other sarcoma	1,018	41	24	45	39	47	48	79	101	108	123	127	103	83	34	16
	Glioma	283	20	15	12	33	22	23	48	31	29	22	17	7	1	3	—
	Cancer undefined	1,621	9	3	10	23	42	61	93	117	159	194	258	223	211	148	70
45a	Lips	19	—	—	—	—	—	—	—	2	2	4	3	4	2	1	1
45b	Tongue	135	—	—	2	1	2	3	5	12	11	12	25	19	23	14	6
45c	Mouth	38	—	—	—	—	—	2	—	2	4	2	6	11	4	5	2
	Tonsil	40	2	1	—	1	1	1	2	1	6	3	2	7	8	5	—
	Pharynx	130	—	—	—	6	2	10	7	10	16	25	19	11	14	8	2
	Jaw, sarcoma	21	1	—	—	3	2	—	1	—	1	3	3	1	4	1	1
	Jaw, other	75	—	—	—	1	—	1	2	5	13	6	10	14	11	8	4
	Others (1)	50	—	—	1	1	—	1	1	4	4	7	9	9	9	3	1
	Total	508	3	1	3	13	7	18	18	36	57	62	77	76	75	45	17
46a	Œsophagus	804	—	—	—	2	5	19	31	59	101	95	135	128	126	78	25
46b	Stomach	6,207	—	—	4	39	62	133	216	326	543	768	1,077	1,221	981	603	234
	Duodenum	37	—	—	—	—	—	—	3	2	1	7	7	6	5	4	2
	Small intestine	70	—	—	1	1	4	1	8	8	7	9	8	11	8	2	2
	Cæcum	469	—	—	1	5	10	8	19	27	37	64	78	72	75	47	26
46c	Hepatic flexure, Splenic flexure	155	—	—	—	1	—	3	13	7	10	14	20	32	29	16	10
	Sigmoid flexure	777	—	—	—	5	16	17	44	50	73	101	125	131	113	62	40
	Large intestine (colon)	4,543	—	—	5	31	46	89	172	236	319	451	711	809	790	573	311
	Other and undefined intestine	81	—	1	—	—	2	2	3	4	7	11	11	15	11	9	5
46d	Rectum (not anus)	2,529	—	—	2	38	33	67	101	162	246	306	376	448	410	235	105
46e	Liver	843	1	—	4	14	8	25	27	46	68	101	128	150	122	88	61
	Gall bladder and ducts	532	—	—	—	2	1	7	16	27	56	73	97	104	79	52	18
46f	Pancreas	1,182	—	—	1	6	9	17	29	73	105	157	223	223	180	107	52
46g	Peritoneum, mesentery, others	232	5	2	5	1	8	21	16	21	27	33	30	32	23	6	2
46h	Other and unspecified digestive organs	3	—	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	Total	18,464	6	3	23	145	204	409	698	1,048	1,601	2,190	3,026	3,382	2,952	1,883	894

47a	Larynx, trachea	289	1	—	—	1	8	9	18	24	33	58	34	39	40	16	8
47b	Lung, bronchus, pleura	1,620	—	2	5	40	36	73	115	144	220	244	282	220	144	80	15
47c	Mediastinum	110	2	—	3	6	6	3	8	8	16	14	11	19	10	4	—
	Other and unspecified respiratory organs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	2,019	3	2	8	47	50	85	141	176	269	316	327	278	194	100	23
48a	Cervix uteri	1,838	—	—	2	41	61	137	220	255	256	262	243	177	116	55	13
48b	Corpus uteri	332	—	—	—	—	4	5	24	27	47	61	54	53	33	15	9
	Other and undefined uterus	2,100	—	—	6	29	43	83	145	244	291	297	315	303	198	97	49
	Total	4,270	—	—	8	70	108	225	389	526	594	620	612	533	347	167	71
49	Ovary and fallopian tube	2,207	1	2	21	47	66	159	241	277	345	301	301	205	145	67	29
	Vulva and vagina	447	—	—	—	1	8	10	18	33	33	57	60	81	80	46	20
	Other female genital organs	7	—	—	—	—	—	—	1	1	1	1	1	—	1	—	1
	Total	2,661	1	2	21	48	74	169	260	311	379	359	362	286	226	113	50
50	Breast	7,738	—	—	5	104	264	499	711	837	948	971	994	923	739	491	252
52	Kidney	350	26	5	4	6	5	7	18	34	33	49	57	44	43	13	6
	Bladder, urethra, ureter	651	—	—	—	1	5	7	23	36	60	65	105	134	97	84	34
	Total	1,001	26	5	4	7	10	14	41	70	93	114	162	178	140	97	40
53	Skin	456	1	1	4	12	6	17	15	13	23	49	43	63	76	71	62
54a	Glioma of brain and nervous system (2)	283	20	15	12	33	22	23	48	31	29	22	17	7	1	3	—
54b, c	Other cancer of brain and meninges ...	93	4	2	4	9	10	12	13	16	9	5	5	2	1	1	—
	Other cancer of other nervous system (3)	12	2	1	2	1	—	—	—	—	—	1	2	3	—	—	—
	Total	388	26	18	18	43	32	35	61	47	38	28	24	12	2	4	—
55a	Adrenal glands	31	8	3	2	1	1	1	3	2	1	4	4	1	—	—	—
55b, d : 1	Ethmoid, nose	86	—	1	2	2	2	5	6	7	5	12	11	12	10	7	4
	Other bone (not jaw)	314	8	8	20	11	10	10	23	24	26	50	39	36	32	11	6
55c	Thyroid gland	231	—	—	—	4	3	8	14	19	28	39	33	34	28	15	6
55d : 2	Other and unspecified (4)	740	10	6	9	20	17	26	56	74	86	98	110	79	84	45	20
	Total	1,402	26	18	33	38	33	50	102	126	146	203	197	162	154	78	36

(1) Includes palate, cheek (internal surface), salivary glands, gums.
(2) Includes glioma of eye.
(3) Includes retina, optic nerve, spinal cord, cauda equina, nerves and sympathetic system.
(4) Includes lymphatic glands, abdomen, eye (except as above), muscle, etc.

Table LXXXIX.—Cancer of Different Sites : Death Rates per million living* by Sex and Age. 1911-20, 1921-30, 1931-35, 1936-39, 1940-44, 1945, 1946 and 1947.

Period	MALES						FEMALES					
	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over
ALL SITES.												
1911–20... ...	57	424	1,665	4,333	7,691	9,208	64	787	2,222	4,257	6,786	8,512
1921–30... ...	60	420	1,618	4,666	9,063	11,994	67	762	2,115	4,172	7,220	10,236
1931–35... ...	62	446	1,618	4,601	9,760	13,486	68	732	2,048	4,010	7,167	10,978
1936–39... ...	67	452	1,590	4,583	9,783	14,716	65	693	1,973	3,905	7,080	11,369
1940–44... ...	69	503	1,705	4,620	9,802	14,078	73	687	1,984	3,849	6,820	10,385
1945	75	517	1,792	4,803	9,705	13,585	73	669	1,900	3,747	6,645	10,165
1946	72	525	1,874	4,743	9,679	14,181	69	684	1,929	3,780	6,720	10,441
1947	80	548	1,877	4,918	9,924	14,535	70	677	1,891	3,707	6,676	10,891
LIPS.												
1911–20... ...	0	2	10	38	108	335	0	0	1	2	5	21
1921–30... ...	0	1	7	36	104	297	0	0	1	2	6	19
1931–35... ...	0	1	7	27	90	281	0	0	0	1	5	15
1936–39... ...	0	1	4	21	74	250	—	0	0	1	4	19
1940–44... ...	0	1	3	16	65	194	—	0	0	2	4	15
1945	0	—	1	10	48	177	—	—	—	2	3	10
1946	0	0	2	16	43	174	0	—	—	2	1	13
1947	—	—	3	5	46	125	—	—	1	2	4	5
TONGUE.												
1911–20... ...	0	19	122	279	395	382	0	4	9	18	30	47
1921–30... ...	0	9	81	266	411	429	0	2	7	17	29	51
1931–35... ...	0	4	40	195	399	439	0	2	5	17	27	52
1936–39... ...	0	3	26	140	324	450	0	1	7	15	33	43
1940–44... ...	0	2	17	91	294	404	0	2	5	16	30	55
1945	0	3	16	58	233	338	—	2	7	11	24	60
1946	0	1	9	54	201	366	—	1	4	9	29	40
1947	0	2	11	49	198	386	0	1	6	9	25	50
MOUTH AND TONSIL(1).												
1911–20... ...	1	9	52	127	179	204	0	2	6	13	20	37
1921–30... ...	1	7	48	158	255	280	0	2	6	16	27	41
1931–35... ...	1	4	30	144	290	362	0	3	6	15	23	51
1936–39... ...	1	4	23	109	269	373	0	2	5	12	29	51
1940–44... ...	1	3	15	68	219	374	0	2	5	12	25	46
1945	0	2	14	53	193	358	1	1	5	11	30	59
1946	0	2	7	26	130	220	0	1	3	8	11	36
1947	1	1	7	29	117	212	0	1	2	6	15	28
PHARYNX.												
1911–20... ...	1	4	25	60	83	74	0	4	8	14	11	17
1921–30... ...	1	4	22	69	113	103	0	4	8	12	16	21
1931–35... ...	1	3	19	71	138	134	0	2	9	15	20	22
1936–39... ...	1	3	12	57	139	159	0	2	9	17	23	19
1940–44... ...	1	4	13	44	115	158	1	3	7	14	22	22
1945	1	4	9	42	113	146	0	2	8	10	18	25
1946	1	2	11	36	98	144	1	1	7	14	22	27
1947	1	4	11	37	92	143	1	4	6	17	17	28
JAW.												
1911–20... ...	1	10	52	126	206	231	1	6	15	31	48	64
1921–30... ...	2	6	33	105	178	243	1	4	13	27	45	66
1931–35... ...	1	5	19	65	149	205	1	3	8	21	39	55
1936–39... ...	1	4	16	53	115	186	1	3	9	19	41	64
1940–44... ...	1	2	9	35	97	161	0	2	5	12	26	41
1945	1	2	7	23	67	123	0	1	3	7	20	42
1946	1	2	4	19	72	125	0	1	3	11	19	50
1947	1	2	5	17	60	115	0	1	3	9	16	34
ŒSOPHAGUS.												
1911–20... ...	0	18	139	357	510	466	1	18	43	70	105	144
1921–30... ...	0	10	113	384	600	623	1	13	45	81	133	190
1931–35... ...	0	9	71	341	639	737	0	9	42	93	153	226
1936–39... ...	1	10	50	264	591	758	1	9	37	91	159	242
1940–44... ...	1	9	41	205	557	715	0	7	30	79	152	227
1945	1	12	48	167	497	644	0	7	33	79	158	229
1946	0	8	42	154	462	707	0	6	33	76	175	259
1947	0	6	37	169	470	830	0	7	30	80	150	265

Table LXXXIX—(*contd.*)

Period	MALES						FEMALES					
	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over
STOMACH AND DUODENUM.												
1911–20... ...	6	96	361	952	1,709	1,686	4	74	255	663	1,268	1,457
1921–30... ...	7	114	407	1,067	2,040	2,311	5	73	253	681	1,489	1,952
1931–35... ...	7	116	425	1,076	2,193	2,624	6	71	233	645	1,513	2,212
1936–39... ...	7	113	422	1,087	2,160	2,755	5	69	219	610	1,451	2,264
1940–44... ...	6	112	406	1,062	2,088	2,620	6	62	206	580	1,321	2,027
1945	7	110	389	1,084	2,095	2,506	5	64	182	541	1,269	1,954
1946	5	109	389	1,028	2,016	2,696	4	70	197	534	1,315	2,102
1947	5	109	397	1,060	2,101	2,630	4	57	184	540	1,317	2,119
INTESTINE EXCEPT RECTUM AND DUODENUM(2).												
1911–20... ...	4	44	145	423	901	1,154	4	50	179	469	982	1,358
1921–30... ...	4	44	153	508	1,237	1,840	4	51	180	506	1,198	2,006
1931–35... ...	5	44	160	520	1,384	2,248	5	59	185	498	1,266	2,398
1936–39... ...	5	48	155	543	1,431	2,495	6	62	193	501	1,237	2,502
1940–44... ...	5	50	156	526	1,422	2,409	6	59	192	493	1,202	2,361
1945	7	47	156	504	1,431	2,435	5	74	191	490	1,145	2,184
1946	7	53	165	498	1,387	2,396	5	65	181	483	1,163	2,382
1947	6	49	144	478	1,376	2,507	4	58	199	451	1,153	2,467
RECTUM.(3)												
1911–20... ...	4	37	142	445	895	1,113	3	36	111	260	509	647
1921–30... ...	4	31	143	483	1,057	1,421	4	32	98	253	513	778
1931–35... ...	4	35	135	481	1,165	1,570	4	31	87	239	511	791
1936–39... ...	4	33	121	478	1,170	1,736	3	32	93	225	493	784
1940–44... ...	4	38	126	457	1,215	1,741	4	33	98	231	502	812
1945	4	39	137	457	1,206	1,690	3	31	96	224	498	811
1946	3	34	114	433	1,155	1,836	3	27	96	222	482	823
1947	4	35	117	412	1,110	1,824	3	29	88	226	470	869
LIVER.												
1911–20... ...	3	33	144	420	822	987	3	38	160	472	920	1,104
1921–30... ...	2	19	85	264	609	859	2	20	82	256	595	896
1931–35... ...	2	16	55	180	449	654	1	13	49	140	365	611
1936–39... ...	1	11	51	144	334	538	1	13	39	112	269	495
1940–44... ...	1	12	45	129	302	460	1	11	35	99	228	410
1945	1	7	40	130	284	427	1	6	26	88	208	359
1946	1	9	48	107	274	375	1	9	25	79	182	333
1947	1	11	34	108	258	339	2	10	25	69	158	314
GALL BLADDER AND DUCTS.												
1911–20... ...	0	2	10	26	59	83	0	3	19	58	113	132
1921–30... ...	0	3	10	34	90	155	0	4	22	75	166	243
1931–35... ...	0	2	11	40	95	174	0	4	21	72	176	260
1936–39... ...	0	2	12	35	91	165	0	3	19	69	146	233
1940–44... ...	0	2	10	33	84	146	0	4	18	56	134	195
1945	—	4	8	38	80	110	0	4	19	55	126	187
1946	0	2	13	32	81	114	0	4	20	51	109	168
1947	0	3	11	35	76	88	0	2	14	53	115	173
PANCREAS.												
1911–20... ...	1	10	36	88	128	127	1	7	26	68	109	111
1921–30... ...	1	15	53	132	223	253	1	9	34	100	170	214
1931–35... ...	1	14	62	148	300	381	1	10	38	113	224	290
1936–39... ...	1	14	61	163	324	475	1	8	42	120	244	362
1940–44... ...	1	15	63	167	337	487	1	9	36	114	240	323
1945	1	14	66	166	335	471	1	10	41	102	267	387
1946	1	13	69	175	364	534	0	13	38	127	265	356
1947	2	18	57	183	377	511	1	8	34	107	254	393
PERITONEUM, MESENTERY.(4)												
1911–20... ...	1	5	12	26	42	37	1	10	28	57	83	100
1921–30... ...	2	6	10	22	31	29	1	7	19	39	51	53
1931–35... ...	2	5	10	16	22	20	1	5	14	26	37	30
1936–39... ...	2	5	7	15	23	24	1	5	11	26	30	28
1940–44... ...	2	6	10	20	30	23	2	5	13	23	36	32
1945	2	6	13	19	18	19	2	5	14	28	43	30
1946	2	4	9	23	21	19	1	5	10	19	34	15
1947	2	4	11	15	13	11	1	8	12	23	35	36

Table LXXXIX—(*contd.*)

Period	MALES						FEMALES					
	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over
LARYNX, TRACHEA.												
1911–20... ...	0	10	61	140	191	157	1	8	20	25	24	28
1921–30... ...	0	8	64	185	285	242	0	7	23	35	38	37
1931–35... ...	0	7	49	176	295	323	0	7	23	33	42	47
1936–39... ...	0	6	38	154	310	371	0	6	20	38	48	60
1940–44... ...	0	6	35	125	286	342	0	6	19	36	45	54
1945	0	6	29	119	252	298	0	5	17	35	44	62
1946	0	5	33	122	251	343	0	4	17	34	42	51
1947	0	3	29	103	246	306	0	5	14	37	42	74
LUNG, BRONCHUS, PLEURA.												
1911–20... ...	3	13	34	64	76	42	1	8	20	34	42	28
1921–30... ...	3	29	73	128	136	92	1	10	25	50	60	51
1931–35... ...	5	69	217	350	347	239	2	18	47	94	124	105
1936–39... ...	8	99	335	579	570	381	2	24	60	123	176	155
1940–44... ...	8	129	453	866	799	498	3	27	72	140	205	183
1945	10	144	555	1,116	1,050	571	4	29	79	169	238	200
1946	8	160	639	1,229	1,184	705	3	33	77	169	261	238
1947	9	173	703	1,376	1,388	802	4	32	87	190	286	276
MEDIASTINUM.												
1911–20... ...	2	10	22	46	53	35	1	5	12	21	26	22
1921–30... ...	2	11	32	63	82	55	1	5	13	27	40	35
1931–35... ...	1	9	24	45	67	57	1	3	8	19	25	30
1936–39... ...	2	6	19	44	63	46	1	3	6	15	25	29
1940–44... ...	2	8	27	48	57	52	1	3	7	13	23	30
1945	2	11	19	47	52	44	1	3	6	13	21	15
1946	2	7	17	34	43	45	2	3	7	12	18	20
1947	2	6	18	33	44	38	1	3	5	12	17	16
	PROSTATE.						**UTERUS.**					
1911–20... ...	0	2	16	99	329	510	11	218	556	791	861	773
1921–30... ...	0	2	22	158	593	1,034	11	200	473	682	831	823
1931–35... ...	0	2	26	175	734	1,355	8	171	414	585	742	745
1936–39... ...	0	4	25	193	772	1,535	7	151	386	557	697	747
1940–44... ...	0	3	26	206	829	1,601	7	127	377	556	684	690
1945	0	4	23	192	785	1,669	7	98	340	541	629	688
1946	1	2	27	217	859	1,698	7	96	344	508	620	680
1947	0	2	25	223	899	1,934	7	98	308	497	652	678
	TESTIS.						**OVARY AND FALLOPIAN TUBE.**					
1911–20... ...	3	8	7	8	15	29	4	31	78	103	100	76
1921–30... ...	4	10	7	9	15	28	5	43	112	156	170	133
1931–35... ...	4	12	10	8	15	23	6	53	143	194	220	179
1936–39... ...	5	12	7	10	18	24	7	60	158	222	253	244
1940–44... ...	5	13	11	8	17	19	7	63	171	240	262	228
1945	6	11	9	11	10	25	6	61	175	253	275	263
1946	8	13	11	6	13	24	7	62	177	260	271	214
1947	6	14	13	7	9	24	6	66	174	264	288	279
	PENIS.						**VAGINA, VULVA[5].**					
1911–20... ...	0	3	9	29	51	108	1	6	20	49	100	174
1921–30... ...	0	2	9	22	58	118	0	6	19	49	104	189
1931–35... ...	0	3	9	21	52	126	0	5	19	43	111	206
1936–39... ...	0	1	6	20	48	134	0	5	16	41	107	204
1940–44... ...	0	2	7	15	45	108	1	6	15	43	101	185
1945	0	2	7	17	35	54	0	5	18	31	86	171
1946	0	1	7	9	33	80	1	4	13	37	83	138
1947	—	2	5	15	43	79	0	5	17	37	80	169
	BREAST.											
1911–20... ...	0	1	3	6	12	25	.6	176	474	696	946	1,503
1921–30... ...	0	1	3	8	14	27	7	187	508	782	1,052	1,740
1931–35... ...	0	1	3	9	17	33	8	189	529	839	1,098	1,849
1936–39... ...	0	1	4	8	16	35	8	184	516	830	1,132	1,889
1940–44... ...	0	1	4	8	19	28	9	201	533	823	1,114	1,612
1945	0	1	3	6	17	46	9	198	500	784	1,067	1,590
1946	0	1	6	6	19	21	9	211	531	834	1,122	1,629
1947	0	2	2	9	15	31	9	224	520	785	1,092	1,718

Table LXXXIX—(*contd.*)

Period	MALES						FEMALES					
	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over
KIDNEY.												
1931–35... ...	4	10	25	56	72	71	3	5	16	35	58	60
1936–39... ...	4	11	28	56	76	66	3	5	15	31	56	63
1940–44... ...	4	8	29	61	82	65	3	6	15	33	56	65
1945	2	9	29	72	78	65	4	6	12	29	53	58
1946	4	8	30	63	90	90	4	6	16	35	54	71
1947	5	7	27	76	107	88	4	4	17	34	58	72
BLADDER, URETER, URETHRA.												
1911–20... ...	1	8	36	124	297	385	0	4	15	43	91	133
1921–30... ...	1	8	38	132	309	467	0	4	17	48	108	173
1931–35... ...	0	9	47	139	332	523	0	4	14	44	111	190
1936–39... ...	1	8	45	146	329	542	0	4	15	52	118	185
1940–44... ...	1	10	55	169	367	582	0	5	20	55	124	225
1945	1	8	63	176	379	550	0	5	18	52	126	239
1946	0	15	53	169	396	599	0	4	20	59	143	244
1947	0	10	52	179	380	668	0	4	20	51	136	249
SKIN (6).												
1911–20... ...	1	9	29	79	187	643	1	5	15	42	111	371
1921–30... ...	1	8	26	82	210	705	1	7	13	36	102	388
1931–35... ...	1	7	22	64	201	674	1	5	13	32	84	379
1936–39... ...	1	6	20	56	177	662	1	6	15	27	76	329
1940–44... ...	1	7	21	55	161	527	2	6	13	29	70	268
1945	2	10	17	52	153	437	2	8	16	27	67	251
1946	1	8	23	48	127	410	1	6	8	26	64	238
1947	2	7	17	51	128	414	2	7	9	29	60	242
BRAIN AND CENTRAL NERVOUS SYSTEM.												
1931–35... ...	9	25	37	32	15	8	9	14	25	23	11	9
1936–39... ...	10	25	48	46	16	10	8	20	26	26	13	7
1940–44... ...	10	28	49	45	21	6	8	16	27	24	14	8
1945	11	29	53	62	24	15	9	19	33	32	12	11
1946	10	28	55	50	24	4	10	21	28	32	16	10
1947	13	36	49	66	25	11	9	20	36	27	21	7
BONES (EXCEPT JAW).												
1911–20... ...	7	12	25	52	77	89	5	8	22	39	57	82
1921–30... ...	8	13	27	56	83	109	6	11	23	40	66	86
1931–35... ...	8	11	32	52	82	84	6	11	23	37	61	68
1936–39... ...	9	14	29	57	89	114	6	11	21	42	60	79
1940–44... ...	8	13	32	61	99	111	6	10	22	40	68	84
1945	7	11	34	67	88	112	6	8	22	39	64	79
1946	7	11	32	62	84	125	5	9	23	40	58	84
1947	9	11	28	52	82	103	5	8	20	36	55	79
THYROID GLAND.												
1911–20... ...	0	1	4	9	12	12	0	3	9	20	34	33
1921–30... ...	0	1	5	12	14	18	0	3	9	23	42	58
1931–35... ...	0	1	5	12	20	16	0	3	11	24	44	54
1936–39... ...	0	1	5	11	17	18	0	3	10	24	44	59
1940–44... ...	0	2	5	11	20	23	0	3	10	25	40	59
1945	0	2	4	9	20	35	0	1	8	26	47	58
1946	0	1	4	6	19	24	0	3	8	24	47	57
1947	0	1	7	10	24	18	0	3	11	27	38	57
OTHER SITES.												
1931–35... ...	6	22	68	158	198	125	5	32	66	113	77	44
1936–39... ...	3	7	21	94	237	414	3	2	26	59	116	211
1940–44... ...	7	17	37	89	175	224	5	9	33	61	92	128
1945	9	19	43	127	162	220	7	16	31	68	107	143
1946	10	27	53	116	233	310	5	21	43	75	115	163
1947	9	29	54	120	239	297	5	14	48	86	123	195

* Including deaths of non-civilians in England and Wales, and based upon mid-year populations in 1911–14 and 1921–39 and total populations inclusive of Armed Forces at home and abroad in 1915–20 and 1940–47.

(1) Includes palate, cheek (internal surface), salivary glands, gums.
(2) Includes small intestine, cæcum, flexures, large and undefined intestine.
(3) Includes anus in 1911–30.
(4) Includes omentum.
(5) Includes other female genital organs.
(6) Includes scrotum ; also anus from 1931.

For females, the E.A.D.R. at ages under 35, which averaged 66 between 1911 and 1939, and 73 in 1940–44, averaged 71 in 1945–47; at 35–44 the progressive fall from 787 in 1911–20 to 687 in 1940–44 continued, the average rate in 1945–47 being 677; at 45–54 the decline from 2,222 in 1911–20 to about 1,980 in 1936–44 continued, the average in 1945–47 being 1,907; at 55–64 the steady fall from 4,257 in 1911–20 to 3,849 in 1940–44 continued, giving an average of 3,745 in 1945–47; at 65–74 the fall from 7,220 in 1921–30 to 6,820 in 1940–44 continued, giving an average of 6,680 in 1945–47; at ages 75 and over the rate has not changed consistently since 1921.

The contrast between the trends of male and female death rates is largely explained by the very different behaviour of rates for cancer of the lung and bronchus on the one hand, and for cancer of all other sites combined on the other.

Cancer of All Sites except lung, bronchus and pleura.

(The highest rate in each sex-age group is shown in italic type.)

	Death rate per million living					
	0–34 E.A.D.R.	35–	45–	55–	65–	75 and over
Males						
1911–20 ...	54	*411*	*1,631*	4,269	7,615	9,166
1921–30 ...	57	391	1,545	*4,538*	8,927	11,902
1931–35 ...	57	377	1,401	4,251	*9,413*	13,247
1936–39 ...	59	353	1,255	4,004	9,213	*14,335*
1940–44 ...	61	374	1,252	3,754	9,003	13,580
1945–47 ...	*67*	371	1,216	3,581	8,562	13,408
Females						
1911–20 ...	63	*779*	*2,202*	*4,223*	6,744	8,484
1921–30 ...	66	752	2,090	4,122	*7,160*	10,185
1931–35 ...	66	714	2,001	3,916	7,043	10,873
1936–39 ...	63	669	1,913	3,782	6,904	*11,214*
1940–44 ...	*70*	660	1,912	3,709	6,615	10,202
1945–47 ...	67	645	1,826	3,569	6,418	10,261
1945–47 per cent. of 1931–35						
Males ...	118	98	87	84	91	101
Females ...	102	90	91	91	91	94

The table above shows that mortality from cancer of all sites except lung and bronchus at ages under 35 was stationary for each sex in the period 1921–35, and then increased for males. At ages between 35 and 55 it was falling for each sex from 1911–20 to 1936–39, and continued to decline except amongst men of 35–44. At 55–64 the fall began after 1911–20 for women and after 1921–30 for men, whilst at more advanced ages the decline set in still later. At ages between 45 and 65 the amount of decline in this rate since 1931–35 has actually been greater for men than for women.

Apart from bronchogenic cancer there has been, therefore, a progressive decline in cancer mortality both of men and women at all age groups between 35 and 65 since before 1930, and at ages 65–74 since before 1935.

Lip and Tongue.—The progressive decline in male death rates continued, as the following comparison of average rates in 1945–47 with mean annual rates in previous periods indicates :—

	Lip					Tongue				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1931–35 ...	1	7	27	90	281	4	40	195	399	439
1936–39 ...	1	4	21	74	250	3	26	140	324	450
1940–44 ...	1	3	16	65	194	2	17	91	294	404
1945–47 ...	0	2	10	46	159	2	12	54	211	363

Improvement has been remarkable at every age and particularly before 65.

Mouth, Tonsil and Pharynx.—The fall in male death rates for mouth and tonsil has been similar to that for lip and tongue, and the decline in mortality from cancer of the pharynx has continued to spread to higher age groups, appearing

	Mouth, tonsil					Pharynx				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1931–35 ...	4	30	144	290	362	3	19	71	138	134
1936–39 ...	4	23	109	269	373	3	12	57	139	159
1940–44 ...	3	15	68	219	374	4	13	44	115	158
1945–47 ...	2	9	36	147	263	3	10	38	101	144

at 65–74 after 1936–39 and at 75 and over since 1940–44. The rates for malignant neoplasms of the **jaw**, which include in considerable proportion advanced growths which must have started in the mouth, also continue to decrease, average male death rates in 1945–47 being 2, 5, 20, 66, 121 at successive age groups after 35, compared with 2, 9, 35, 97, 161 in 1940–44 and 4, 16, 53, 115, 186 in 1936–39.

Œsophagus.—The decrease in mortality of males continued at ages 35–44 and between 55 and 75, but no improvement appeared in 1945–47 in the rates at other ages. For females the rates showed no appreciable change at ages under 65, and at later ages they increased.

	Stomach (Males)					Stomach (Females)				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1931–35 ...	116	425	1,076	2,193	2,624	71	233	645	1,513	2,212
1936–39 ...	113	422	1,087	2,160	2,755	69	219	610	1,451	2,264
1940–44 ...	112	406	1,062	2,088	2,620	62	206	580	1,321	2,027
1945–47 ...	109	392	1,057	2,071	2,611	64	188	538	1,300	2,058

Stomach (with duodenum).—In 1945–47 slight decreases in death rates occurred at all age groups of males, as was the case in 1940–44, and also in 1936–39 at some ages. Amongst females there were in 1945–47 decreases at ages between 45 and 75; and comparison with 1931–35 shows that substantial falls in mortality have occurred at every age since that period.

Intestines (except rectum).—Since 1936–39 there has been a downward trend of death rates at ages between 55 and 75 for each sex, and also at ages over

	Intestines (Males)					Intestines (Females)				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1931–35 ...	44	160	520	1,384	2,248	59	185	498	1,266	2,398
1936–39 ...	48	155	543	1,431	2,495	62	193	501	1,237	2,502
1940–44 ...	50	156	526	1,422	2,409	59	192	493	1,202	2,361
1945–47 ...	50	155	493	1,398	2,446	66	190	475	1,154	2,344

75 for females. No consistent change has occurred at ages under 55.

Rectum.—Amongst males aged 55–64 the death rate has declined since 1931–35, but in other groups at ages under 75 there has been no consistent change. At 75 and over the rates for each sex increased in 1945–47.

Liver.—This group comprises deaths from cancer of the liver, either stated to be primary or where no primary neoplasm of another site could be ascertained,

	Liver (Males)					Liver (Females)				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1931–35 ...	16	55	180	449	654	13	49	140	365	611
1936–39 ...	11	51	144	334	538	13	39	112	269	495
1940–44 ...	12	45	129	302	460	11	35	99	228	410
1945–47 ...	9	41	115	272	380	8	25	79	183	335

and it excludes cancer stated to be of the gall bladder or ducts. The steady fall in death rates in every group since 1931–35 must be attributed, wholly or in part, to improving accuracy of death certification as regards statement of the primary site when known. This implies a transfer to such sites as the stomach, intestines, and breast, the trend of whose rates must have been prejudiced in consequence.

Gall bladder and Bile ducts.—At ages under 55 death rates have not changed appreciably since 1936–39. For males the average rates at 55–64, 65–74, and over 75 in 1945–47 were 35, 79, 104 compared with 35, 91, 165 in 1936–39, and 40, 95, 174 in 1931–35; and for females they were 53, 117, 176 compared with 69, 146, 233 and 72, 176, 260. The decrease in mortality from this form of cancer was, therefore, considerable at ages over 55.

Pancreas.—Death rates of males under 55 and of females under 65 show no consistent change; but at later ages rates still tend to increase, particularly amongst men.

Larynx.—At ages 35–44 there has been a progressive fall in death rates since 1911–20. Amongst males the rates began to decline in 1931–35 at ages 45–64, and have fallen by about a third ; not until 1940–44 did the rates at ages over 65 begin to decrease. Amongst females no change has occurred since 1931–35 at ages 55–74, and the rate has increased at ages over 75.

Lung and Bronchus.—The increase in death rates certified as due to cancer of the lung and bronchus continues to be unparalleled among all the causes of death. Comparing the rates in 1947 with the mean annual rates in 1921–30, men between 45 and 75 show a ten-fold increase, whilst a three-–,four-–or five-fold increase has occurred amongst women of various ages. No sign of

	Lung, bronchus, pleura (Males)					Lung, bronchus, pleura (Females)				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1921–30 ...	29	73	128	136	92	10	25	50	60	51
1931–35 ...	69	217	350	347	239	18	47	94	124	105
1936–39 ...	99	335	579	570	381	24	60	123	176	155
1940–44 ...	129	453	866	799	498	27	72	140	205	183
1945 ...	144	555	1,116	1,050	571	29	79	169	238	200
1946	160	639	1,229	1,184	705	33	77	169	261	238
1947	173	703	1,376	1,388	802	32	87	190	286	276

diminution in the annual increments of mortality appeared in 1946 or 1947 ; the equivalent average death rate of males at ages under 65 was 285 per million living in 1945, 316 in 1946 and 351 in 1947. At the rates of dying between ages 55 and 75 in 1947, 14 out of a thousand men then aged 55–64 would be expected to die of lung cancer within ten years, if no further increase occurs in the rates ; and if the present upward trend of rates continues about one out of every 50 would have that expectation. Whatever the cause of the increase, comparison of the relative increments in three successive intervals of $4\frac{1}{2}$ years, starting at 1931–35 and ending at 1946–47, gives little reason to anticipate a levelling out of the upward trend in the immediate future. For men the death rates are rising by more than one-tenth annually in each age group ; but what proportion of this is attributable to more complete diagnosis of the condition cannot at present be estimated.

	Ratio of death rate to that in period $4\frac{1}{2}$ years before.									
	Males					Females				
	35–	45–	55–	65–	75 and over	35–	45–	55–	65–	75 and over
1936–39 ...	1·43	1·54	1·65	1·64	1·59	1·33	1·28	1·31	1·42	1·48
1940–44 ...	1·30	1·35	1·50	1·40	1·31	1·13	1·20	1·14	1·16	1·18
1946–47 ...	1·29	1·48	1·50	1·61	1·51	1·20	1·14	1·28	1·33	1·40

Mediastinum.—Death rates of males attributed to cancer of the mediastinum in 1945–47 averaged 8, 18, 38, 46, 42 at the five age groups, compared with 6, 19, 44, 63, 46 in 1936–39 ; and for females they were 3, 6, 12, 19, 17 compared with 3, 6, 15, 25, 29. These show decreases at ages over 55 for each sex.

Prostate and Testis.—The progressive rise in death rates attributed to cancer of the prostate at ages over 55 continued in 1946 and 1947, after some interruption in 1945. No consistent change has occurred in rates for cancer of the testis.

Uterus and Vagina.—Considerable decreases occurred in 1946 and 1947 in mortality from cancer of the uterus at each age. Comparing 1945–47 with 1936–39 the percentage decreases at successive age periods after 35, which were 36, 14, 7, 9, 9, indicated a more rapid improvement amongst younger women. For cancer of the vagina and vulva on the other hand the recent fall in death rates has been more pronounced at advanced ages. It is not yet possible to obtain reliable statistics for cancer of the cervix and corpus uteri separately owing to failure of certifying doctors to make the distinction on death certificates. Efforts are being made to remedy this defect in the statistics, but not for several years will it be possible to obtain distinctive rates. In 1947 there were 1,838 deaths certified as due to cancer of the cervix and 2,432 as due to cancer of other and unspecified parts of the uterus, most of the latter group being uterus undefined.

Breast.—Mortality of females from breast cancer was increasing up to 1931–35 at every age, and at ages over 65 the increase continued until 1936–39. In 1945–47 the average rate at 35–44 was 211 per million, compared with 201 in 1940–44 and 184 in 1936–39 ; at 45–54 the average rate showed no change compared with 1936–39 ; at 55–64 the gradual fall continued, the average rate being 801 compared with 823 in 1940–44 and 839 in 1931–35 ; and at ages over 65 also there was a slight improvement compared with 1936–39.

Ovary and Fallopian tubes.—Death rates attributed to cancer of these sites continued to increase in 1946–47 at every age.

Kidney and Bladder.—In 1945–47 the average death rates for malignant neoplasms of the kidney showed no appreciable change amongst males under 55, nor amongst females of any age group ; but for men over 55 the rates increased. For cancer of the bladder and urethra the rates continued to increase amongst men over 55 and women over 65.

Skin and Bones.—Death rates due to skin cancer continued to fall amongst men over 55 and women over 65, with little change at younger ages. Rates for malignant growths of the bones showed no important changes in 1946–47.

Table XC.—Cancer of All Sites : Death Rates per million living in each Region and class of Area by Sex in three Age groups, 1947.

Area	15–44		45–64		65 and over	
	Males	Females	Males	Females	Males	Females
England and Wales ...	**279**	**307**	**3,174**	**2,694**	**11,092**	**7,926**
Regional Summary :						
South East	278	301	3,268	2,634	11,331	8,034
Greater London ...	308	331	3,487	2,635	11,959	8,235
Remainder of S.E. ...	234	259	2,977	2,634	10,687	7,821
North	304	322	3,353	2,806	11,238	7,852
North I	289	354	3,374	2,818	10,315	7,977
North II	269	314	3,188	2,499	11,088	7,876
North III	297	319	3,246	2,781	11,412	7,822
North IV	322	315	3,441	2,876	11,506	7,827
Midland	280	300	2,984	2,664	11,090	7,773
Midland I	298	307	3,130	2,726	11,234	7,903
Midland II	242	288	2,710	2,546	10,829	7,525
East	194	281	2,753	2,599	10,015	7,797
South West	236	306	2,621	2,605	10,567	8,000
Wales	259	303	3,089	2,683	10,575	8,099
Wales I	242	302	3,000	2,617	10,590	8,087
Wales II	303	307	3,320	2,840	10,544	8,120
Density Summary :						
County Boroughs* ...	302	302	3,526	2,866	11,879	7,966
Other Urban Districts*	269	308	3,013	2,675	10,867	7,845
Rural Districts* ...	228	286	2,563	2,495	9,720	7,700

* Excluding Greater London.

Regional distribution for separate sites.—Table XC shows the death rates in 1947 at three age periods from cancer of **all sites** in each region and density aggregate. The rates are based on the estimated civilian populations at the end of 1947, and they exclude deaths of non-civilians.

A noteworthy feature of these rates is the contrast between the sexes in the difference between urban and rural mortality. Expressing the excess of death rates in the county boroughs over those in the rural districts in terms of the national rate taken as a hundred, the excess at age periods 15–44, 45–64 and over 65 was for males 27, 30, 19, and for females 5, 14, 3, the excess at each age being much greater for men than women. When Greater London is compared with the Remainder of the South East in the same way, the excess at the three ages was 27, 16, 11 for males and 23, 0, 5 for females. These contrasts are largely due to the dominant effect of cancer of the lung.

The range of variation between different regions was also greater for males than for females ; the differences between North IV and the East for example, when expressed in terms of the national rate taken as a hundred, were as high as 46, 22, 13 at the three age groups for males compared with 11, 10, 0·4 for females. The relative differences between regions tended to diminish with advancing age.

Table XCI.—Cancer of Stomach and Duodenum : Death Rates per million living in each Region and class of Area by Sex in three Age groups, 1947.

Area	15–44		45–64		65 and over	
	Males	Females	Males	Females	Males	Females
England and Wales ...	**48**	**25**	**679**	**342**	**2,223**	**1,554**
Regional Summary :						
South East	47	21	577	279	2,027	1,370
Greater London ...	57	26	597	284	2,022	1,472
Remainder of S.E. ...	32	15	550	273	2,032	1,261
North	53	29	816	409	2,426	1,710
North I	73	34	956	487	2,402	2,175
North II	41	20	827	333	2,214	1,655
North III	44	34	706	419	2,513	1,609
North IV	53	27	829	393	2,432	1,639
Midland	49	26	619	359	2,086	1,445
Midland I	52	26	664	362	2,146	1,434
Midland II	43	27	534	354	1,978	1,464
East	31	17	537	217	2,012	1,423
South West	24	21	664	316	2,227	1,631
Wales	54	23	828	428	2,849	2,295
Wales I	48	17	823	416	2,594	2,135
Wales II	72	39	843	457	3,395	2,591
Density Summary :						
County Boroughs* ...	50	26	785	393	2,285	1,555
Other Urban Districts*	46	23	685	346	2,303	1,615
Rural Districts* ...	36	23	584	312	2,178	1,529

* Excluding Greater London.

Table XCI shows the regional death rates in 1947 for cancer of the **stomach ;** and, expressing the differences between rates as percentages of the national rate, the excess of county borough over rural rates at the successive age periods was 29, 30, 5 for males and 12, 24, 2 for females. Amongst the regions, North I and Wales II had highest, and the East and South East had lowest rates. The relative differences between North I and the South East excluding Greater London were as high as 85, 60, 17 per cent. of the national rate for males and 76, 63, 59 for females, indicating a very strong influence of environmental factors, quite as pronounced amongst women as men.

The great importance of such environmental factors, operating particularly in northern industrial towns and producing great differences between one large town and another, can be seen from comparative mortality ratios for cancer of the stomach based on deaths in the nineteen years 1921 to 1939. The C.M.R's. given below were calculated by applying the death rates in the aggregate of all county boroughs at ages 0—, 15—, 25—, 35—, 45—, 55—, 65—, 75 and over to the census populations of the individual towns at the centre of the period and expressing the actual deaths in terms of the resulting total of expected deaths taken as a hundred. They are, therefore, adequately corrected for any effects of age differences. The eight county boroughs yielding highest ratios for each sex are shown, and also the seven with lowest ratios. In every instance the excess over or deficiency from 100 was statistically significant.

Cancer of Stomach 1921-39. C.M.R. in terms of all county boroughs taken as 100.

Males		Females	
Salford	130	Bootle	142
Birkenhead	129	Oldham	137
Rochdale	128	Rochdale	136
Liverpool	126	Swansea	135
Bootle	125	St. Helens	134
West Hartlepool	125	Sunderland	134
Oldham	124	Birkenhead	132
Swansea	123	South Shields	132
Burton upon Trent	75	Brighton	70
Ipswich	75	Portsmouth	70
Oxford	74	Reading	69
Worcester	71	Bath	69
Canterbury	69	Canterbury	67
Bournemouth	62	Burton upon Trent	66
Doncaster	55	Bournemouth	61

Table XCII.—Cancer of Uterus and Breast (females) : Death Rates per million living in each Region and class of Area at three Age groups, 1947.

Area	UTERUS			BREAST		
	15–44	45–64	65 and over	15–44	45–64	65 and over
England and Wales	**43**	**391**	**649**	**91**	**636**	**1,276**
Regional Summary :						
South East	36	345	676	95	666	1,342
Greater London	37	338	684	103	677	1,331
Remainder of S.E.	34	354	666	82	651	1,354
North	50	445	628	92	604	1,173
North I	76	498	704	88	505	951
North II	72	450	510	75	506	1,195
North III	46	445	645	96	605	1,158
North IV	38	427	621	95	653	1,241
Midland	46	376	667	80	648	1,327
Midland I	50	377	686	87	647	1,345
Midland II	37	375	630	66	651	1,294
East	31	358	520	82	643	1,347
South West	48	389	670	83	668	1,318
Wales	41	435	627	104	558	1,124
Wales I	47	434	673	99	547	1,209
Wales II	26	436	541	118	585	967
Density Summary :						
County Boroughs*	45	455	667	85	627	1,237
Other Urban Districts*	46	400	660	88	612	1,292
Rural Districts*	40	321	568	90	649	1,254

* Excluding Greater London.

Table XCII gives the regional death rates of females in 1947 for cancer of the uterus and breast. The rates for cancer of the **uterus** showed a changing relation with urbanisation as age advanced; at 15–44 Greater London's rate was below that of other towns and below that of the rural districts; at 45–64 the relative excess of the county borough rate over that of rural districts increased to 34 per cent. of the national rate; at 65 and over it was 15 per cent., and Greater London's rate exceeded that of the other towns. At ages 15–44 North I and II gave much higher rates than any other region; at 45–64 the order of ranking was North I, II, III, Wales II, I; and at 65 and over it was North I, Midland I, Greater London, Wales I.

For **breast** cancer rural district rates exceeded those of the county boroughs at each age period, but Greater London's were higher still. The North and Wales tended to have low rates whilst the South had high rates at ages after 45, in contrast with cancer of the uterus.

Table XCIII continues the series of proportionate rates for certain sites, expressed per thousand deaths from cancer of all sites. For cancer of the respiratory system the proportion increased from 156 in 1940–42 to 222 in 1947 for males in England and Wales; in Greater London it increased from 216 to 296, in county boroughs from 173 to 248, in other urban districts from 133 to 187, and in rural districts from 103 to 155. The rate of increase was no less, therefore, in rural areas than in the towns, nor was it any less in the south than the north. This rapid increase in lung cancer deaths affects the proportions for other sites amongst males appreciably and needs to be borne in mind for this method of study.

Table XCIII.—Deaths from Cancer of certain Sites per 1,000 for all Sites at certain Ages in Regions and different classes of Area. (Civilians) 1940-42, 1943-45, 1946 and 1947.

	England and Wales	Greater London	Remainder of South East	North	Midland	East	South West	Wales	County boroughs*	Other urban districts*	Rural districts*
Cancer of Mouth and Œsophagus.											
Males, all ages											
1940–42	117	109	117	120	120	111	124	125	123	118	114
1943–45	102	96	101	105	104	99	112	103	107	100	104
1946	89	88	92	86	90	87	96	93	91	87	92
1947	86	81	82	91	85	82	95	90	89	87	86
Females, all ages											
1940–42	34	31	32	34	31	36	37	53	35	33	37
1943–45	35	31	30	36	31	33	41	53	34	35	39
1946	35	29	35	37	29	34	40	62	33	36	44
1947	34	26	31	34	29	52	43	58	34	36	38

Table XCIII.—(*contd.*)

	England and Wales	Greater London	Remainder of South East	North	Midland	East	South West	Wales	County boroughs*	Other urban districts*	Rural districts*
Cancer of Stomach and Duodenum.											
Males, 15–44											
1940–42	190	173	149	219	176	158	196	231	205	195	170
1943–45	199	170	149	226	213	184	160	244	202	225	183
1946	185	171	142	191	192	203	136	278	191	192	178
1947	171	185	135	174	175	158	103	211	165	172	160
Males, 45–64											
1940–42	238	205	211	257	236	240	247	300	241	249	254
1943–45	225	187	200	240	231	227	244	287	233	237	235
1946	214	166	202	232	212	223	227	294	216	232	240
1947	214	171	185	243	207	195	253	268	223	227	228
Males, 65 *and over*											
1940–42	209	181	196	222	196	207	221	286	208	218	221
1943–45	200	178	185	206	191	198	223	277	192	214	208
1946	202	173	197	213	191	183	213	281	205	205	219
1947	200	169	190	216	188	201	211	269	192	212	224
Females, 15–44											
1940–42	94	92	69	104	99	62	99	104	97	98	82
1943–45	92	88	72	106	91	68	73	95	98	89	87
1946	96	99	82	101	101	58	63	128	98	93	95
1947	80	77	58	91	88	60	68	77	88	76	79
Females, 45–64											
1940–42	134	117	112	150	130	122	123	188	144	135	137
1943–45	129	113	116	142	124	107	119	175	138	135	119
1946	126	103	105	141	129	119	110	184	140	125	129
1947	127	108	104	146	135	84	121	160	137	129	125
Females, 65 *and over*											
1940–42	197	173	167	224	197	185	189	254	208	200	199
1943–45	191	173	173	205	186	190	179	258	196	194	195
1946	198	183	177	208	199	181	202	272	200	208	193
1947	196	179	161	218	186	183	204	283	195	206	199
Cancer of Respiratory System.											
Males, all ages											
1940–42	156	216	145	155	148	106	101	114	173	133	103
1943–45	183	249	169	181	171	131	127	143	199	159	126
1946	207	264	198	204	205	142	156	164	230	182	146
1947	222	296	206	219	209	162	165	168	248	187	155
Females, all ages											
1940–42	41	51	37	43	37	35	33	38	42	37	36
1943–45	45	55	42	47	41	38	30	39	46	41	39
1946	48	57	46	50	42	37	39	43	50	42	44
1947	52	65	54	51	49	46	34	37	54	44	48

Table XCIII.—(*contd.*)

	England and Wales	Greater London	Remainder of South East	North	Midland	East	South West	Wales	County boroughs*	Other urban districts*	Rural districts*
Cancer of Breast.											
Females, 15–44											
1940–42	253	274	277	227	254	266	281	241	235	253	267
1943–45	265	287	275	244	283	243	287	222	255	258	272
1946	279	266	315	265	290	292	310	239	263	301	282
1947	295	312	318	286	266	291	270	343	281	285	315
Females, 45–64											
1940–42	236	261	261	217	239	225	248	197	218	240	236
1943–45	231	254	252	203	244	241	256	199	219	224	244
1946	241	268	255	223	246	242	274	182	231	242	231
1947	236	257	247	215	243	248	257	208	219	229	260
Females, 65 *and over*											
1940–42	158	162	170	149	163	154	164	142	156	159	158
1943–45	161	162	172	151	169	150	174	147	156	168	156
1946	162	156	166	162	165	165	161	161	160	164	169
1947	161	162	173	149	171	173	165	139	155	165	163
Cancer of Uterus.											
Females, 15–44											
1940–42	174	122	182	199	161	173	177	231	190	192	172
1943–45	152	130	144	156	149	197	168	190	153	166	152
1946	135	105	116	135	132	183	146	250	148	131	154
1947	139	111	132	154	152	111	155	136	149	148	139
Females, 45–64											
1940–42	165	150	153	183	159	172	167	153	181	167	148
1943–45	157	137	147	175	152	164	154	165	175	159	144
1946	151	132	151	158	162	145	146	158	159	158	146
1947	145	128	135	159	141	138	149	162	159	150	129
Females, 65 *and over*											
1940–42	87	84	90	87	88	80	91	82	88	90	81
1943–45	85	81	84	89	86	91	81	77	91	85	81
1946	81	80	88	78	84	85	75	66	85	78	80
1947	82	83	85	80	86	67	84	77	84	84	74
Cancer of Other Sites.											
Males, all ages											
1940–42	509	486	540	490	523	568	547	474	483	521	555
1943–45	506	474	542	494	520	564	535	477	486	519	555
1946	499	478	515	492	507	577	535	458	471	518	540
1947	489	453	528	467	513	560	522	477	461	513	539
Females, all ages											
1940–42	439	449	462	419	447	468	445	399	427	437	452
1943–45	447	455	465	436	449	464	457	402	436	446	458
1946	442	460	457	431	442	465	444	378	434	439	442
1947	445	454	469	434	446	464	445	392	441	443	446

* Excluding Greater London.

54, 56d, 57d. Neoplasms of the Brain and Nervous System.—Table XCIV brings together the deaths from all forms of neoplasm of the central nervous system in each year 1936 to 1947. Tumours of uncertain nature numbered 826 in 1946 and 775 in 1947, compared with an annual average of 776 during 1940–45 ; the glioma group of tumours accounted for 582 and 686 in the two years, compared with 545 ; other malignant neoplasms accounted for 266 and 272, compared with 225 ; and neoplasms described as benign had 258 and 287 deaths, compared with 218 annually during 1940–45. The death rate of males per million living from all neoplasms of the brain and nervous system was higher in 1947 than in any of the eleven years preceding.

Table XCIV.—Deaths classed to Neoplasms of the Brain and Nervous System, with distinction of those specified as Glioma and other, Malignant and Benign, and Mortality from all forms. 1936 to 1947.

Year	Number of deaths including non-civilians(1)										Rates per million living at all ages(3)	
	Glioma(2) (except "benign") No. 54a		Sarcoma, other and undefined malignant No. 54b, c		Benign No. 56d		Nature unstated No. 57d		Total neoplasms			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1936 ...	236	178	154	126	60	67	424	464	874	835	45	39
1937 ...	242	181	166	114	77	64	434	421	919	780	47	37
1938 ...	286	177	159	146	69	58	402	409	916	790	46	37
1939 ...	232	189	139	110	87	97	492	476	950	872	48	40
1940 ...	290	205	119	97	91	102	442	406	942	810	47	37
1941 ...	306	200	137	91	108	113	396	378	947	782	47	36
1942 ...	341	225	111	78	86	112	404	338	942	753	47	35
1943 ...	326	222	134	99	100	128	383	356	943	805	46	37
1944 ...	312	229	122	101	106	107	374	355	914	792	45	36
1945 ...	364	252	148	112	114	140	430	393	1,056	897	51	41
1946 ...	342	240	134	132	127	131	458	368	1,061	871	51	39
1947 ...	403	283	167	105	133	154	419	356	1,122	898	54	40

(1) According to the classification in use from 1940 onwards. Prior to 1940 gliomas were classed by the International List as benign and when another disease was mentioned on a death certificate selection was according to rules which gave low precedence to benign neoplasms. This was remedied by the new method of selection which is in accordance with the preference expressed by the certifier. In 1939 the numbers assigned to the glioma group by the old rules were 180 males, 149 females, but there were 52 and 40 classed to other causes where the certifier considered the neoplasm to be the principal cause of death. This, together with the inclusion here of spinal cord and other parts of the nervous system, explains the differences between the numbers in this table and those in Table IV of the Review for 1938–39.

(2) Includes glioma of eye, and varieties set out in the International List, but excludes gliomas when specified as benign.

(3) See note * below Table LXXXIV.

58. Rheumatic Fever.—Deaths attributed to this cause averaged 1,210 per year in 1931–35, 1,024 in 1936–39 and 638 in 1940–45. In 1946 and 1947 there were 366 and 400 deaths respectively. The Comparative Mortality Indices for males and females since 1936 have been as follows :—

Sex	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males ...	1·046	0·772	1·000	0·883	0·789	0·727	0·549	0·665	0·765	0·668	0·406	0·411
Females ...	0·937	0·810	1·000	0·887	0·802	0·550	0·458	0·668	0·548	0·475	0·311	0·341

Thus the mortality of males in 1946–47 was less than half that of 1938 and of females about one-third. The number of civilian deaths in 1946 and 1947 by sex and age were as follows :—

Year	0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over	All Ages
Males																				
1946...	1	7	28	45	25	15	6	2	7	10	10	4	5	4	—	4	1	—	—	174
1947...	—	5	30	41	21	10	12	13	12	8	9	5	5	5	4	4	3	—	1	188
Females																				
1946...	1	10	31	36	17	13	13	7	15	9	10	6	8	7	4	—	1	—	—	188
1947...	1	11	38	47	18	14	11	11	14	8	5	4	8	1	10	1	2	1	1	206

Table XCV gives civilian death rates by sex and age for each year 1940 to 1947, distinguishing deaths without mention of cardiac involvement from deaths with mention of acute or sub-acute rheumatic pericarditis, endocarditis, myocarditis or carditis. In both groups (those with and those without mention

Table XCV.—Rheumatic Fever : Death Rates from Acute Rheumatism and Acute Rheumatic Carditis at different Ages in each year 1940 to 1947.

	Death rate per million living (civilians).															
	1940		1941		1942		1943		1944		1945		1946		1947	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
58a, b, c. Acute rheumatic carditis																
0–	6	10	10	5	8	4	6	4	3	6	9	6	5	6	2	6
5–	32	37	24	26	18	25	26	37	33	32	28	36	22	22	22	27
15–	23	31	26	22	18	18	27	24	23	20	27	13	18	9	13	9
25–	13	15	15	11	9	9	11	14	14	9	10	7	4	5	6	6
45–	8	10	7	6	4	5	6	5	6	7	5	5	3	3	3	3
65 and over	6	8	5	5	4	3	3	5	5	4	4	2	1	0	4	3
58d. Rheumatic fever without mention of heart																
0–	1	1	1	1	1	1	1	1	2	1	2	1	—	1	1	1
5–	5	7	4	5	3	4	5	8	6	8	4	4	4	3	3	4
15–	3	5	2	3	5	1	4	4	4	2	5	4	3	1	1	1
25–	4	3	2	2	2	2	3	3	2	2	2	1	1	1	1	1
45–	5	6	4	4	4	3	1	3	4	3	3	3	2	3	2	0
65 and over	2	4	4	4	4	5	5	7	7	3	2	4	2	2	2	2
All forms C.M.I. All ages ...	·789	·802	·727	·550	·549	·458	·665	·668	·765	·548	·668	·475	·406	·311	·411	·341

of rheumatic heart disease) the rates at each age have been tending to decrease since 1940 though there have been some fluctuations. The ratio of deaths with mention to deaths without mention of heart has been maintained at about six to one at childhood ages, declining towards equal numbers at ages 65 and over.

The average total death rates by sex and age for the years 1940–45 and 1946–47 are compared below.

	0–	5–	15–	25–	45–	65 and over
Males 1940–45	8	31	28	15	10	9
1946–47	4	26	18	6	5	5
Percentage reduction ...	50	16	36	60	50	44
Females 1940–45	7	38	25	13	10	9
1946–47	7	28	10	7	5	4
Percentage reduction ...	—	26	60	46	50	56

The female excess present during 1940–45 at ages 5–14 diminished in 1946–47 and the small male excess at 15–24 was greatly increased.

Table XCVI.—Rheumatic Fever, Chorea, and Rheumatic Heart Disease: Deaths at different Ages of Civilians and Non-civilians from diseases of known Rheumatic origin and from Endocarditis of unspecified cause. 1946 and 1947.

		Males				Females	
		1946		1947		1946	1947
		Civilians	Non-civilians	Civilians	Non-civilians		
58.	Rheumatic Fever						
	0–	8	—	5	—	11	12
	5–	73	—	71	—	67	85
	15–	40	1	31	4	31	32
	25–	25	2	45	1	44	44
	45–	23	—	24	1	31	18
	65 and over ...	5	—	12	—	5	15
	All ages ...	**174**	**3**	**188**	**6**	**189**	**206**
87a.	Chorea						
	0–	—	—	—	—	1	—
	5–	4	—	—	—	8	4
	15–	1	—	2	—	5	2
	25–	4	—	4	—	8	7
	45–	3	—	1	—	7	6
	65 and over ...	2	—	2	—	1	3
	All ages ...	**14**	—	**9**	—	**30**	**22**
90a.	Pericarditis						
	0–	—	—	—	—	1	—
	5–	2	—	1	—	1	—
	15–	2	—	2	1	—	2
	25–	4	—	2	—	2	4
	45–	3	—	1	—	2	5
	65 and over ...	2	—	3	—	—	3
	All ages ...	**13**	—	**9**	**1**	**6**	**14**
92b : 1.	Mitral Disease						
	0–	1	—	1	—	—	—
	5–	24	—	26	—	35	23
	15–	94	3	92	—	144	131
	25–	462	6	483	3	890	884
	45–	948	—	1,052	3	1,575	1,634
	65 and over ...	1,242	—	1,305	—	2,058	2,101
	All ages ...	**2,771**	**9**	**2,959**	**6**	**4,702**	**4,773**
92b : 2.	Other Endocarditis specified as rheumatic						
	0–	—	—	—	—	—	—
	5–	36	—	24	—	28	17
	15–	61	3	59	4	46	54
	25–	217	3	203	4	243	227
	45–	293	—	281	—	333	331
	65 and over ...	205	—	188	—	280	281
	All ages ...	**812**	**6**	**755**	**8**	**930**	**910**

Table XCVI—(*contd.*)

	Males				Females	
	1946		1947		1946	1947
	Civilians	Non-civilians	Civilians	Non-civilians		
93b. Myocarditis specified as rheumatic						
0–	—	—	—	—	—	—
5–	12	—	11	—	17	9
15–	9	1	13	—	14	10
25–	50	—	37	—	58	49
45–	117	—	86	—	159	128
65 and over ...	134	—	124	—	197	184
All ages ...	**322**	**1**	**271**	—	**445**	**380**
95b. Other and Ill-defined rheumatic heart disease						
0–	—	—	—	—	—	—
5–	1	—	1	—	—	3
15–	1	—	1	—	8	5
25–	11	—	13	1	23	19
45–	22	—	36	—	26	53
65 and over ...	8	—	28	—	28	40
All ages ...	**43**	—	**79**	**1**	**85**	**120**
Total of known Rheumatic Origin						
0–	9	—	6	—	13	12
5–	152	—	134	—	156	141
15–	208	8	200	9	248	236
25–	773	11	787	9	1,268	1,234
45–	1,409	—	1,481	4	2,133	2,175
65 and over ...	1,598	—	1,662	—	2,569	2,627
All ages ...	**4,149**	**19**	**4,270**	**22**	**6,387**	**6,425**
92c. Endocarditis unspecified						
0–	—	—	—	—	2	—
5–	6	—	6	—	10	3
15–	22	1	9	1	18	9
25–	87	2	78	3	133	119
45–	590	1	504	2	591	529
65 and over ...	1,045	—	965	—	1,375	1,324
All ages ...	**1,750**	**4**	**1,562**	**6**	**2,129**	**1,984**

Table XCVI gives the deaths by sex and age in 1946 and 1947 from rheumatic fever, chorea, pericarditis, mitral disease, other endocarditis specified as rheumatic, myocarditis specified as rheumatic, other and ill-defined rheumatic heart diseases, total deaths of known rheumatic origin, and deaths from endocarditis without further specification. The percentage distribution of

deaths of known rheumatic origin in the two sexes, combining 1946 and 1947, was as follows :—

	MALES							FEMALES						
	0–	5–	15–	25–	45–	65 and over	All Ages	0–	5–	15–	25–	45–	65 and over	All Ages
Rheumatic Fever ...	87	51	18	5	2	1	4	92	51	13	4	1	0	3
Chorea	—	1	1	1	0	0	0	4	4	1	1	0	0	0
Pericarditis	—	1	1	0	0	0	0	4	0	0	0	0	0	0
Mitral Disease	13	17	45	59	69	78	69	—	20	57	70	75	81	75
Other Endocarditis (rheumatic)	—	21	30	27	20	12	19	—	15	21	19	15	11	14
Myocarditis (rheumatic)	—	8	5	6	7	8	7	—	9	5	4	7	7	6
Other and Ill-defined (rheumatic)	—	1	0	2	2	1	1	—	1	3	2	2	1	2
Total deaths of known rheumatic origin ...	**15**	**286**	**425**	**1,580**	**2,894**	**3,260**	**8,460**	**25**	**297**	**484**	**2,502**	**4,308**	**5,196**	**12,812**

For each sex the proportion of deaths ascribed to rheumatic fever as such declined with advancing age, while deaths ascribed to disease of the mitral valve increased. Deaths from other endocarditis specified as rheumatic were relatively more frequent at ages 15–24 than at other ages.

Table XCVII.—Acute and Chronic Rheumatic Heart Disease : Death Rates at Different Ages. 1946 and 1947.

Year	Death Rates per million living*											
	MALES						FEMALES					
	0–	5–	15–	25–	45–	65 and over	0–	5–	15–	25–	45–	65 and over
	58a, b, c. Acute rheumatic carditis.											
1946 ...	5	22	12	4	3	1	6	22	9	5	3	0
1947 ...	2	22	11	6	3	4	6	27	9	6	3	3
	92b. Endocarditis stated or assumed to be of rheumatic origin.											
1946 ...	1	21	52	104	273	767	—	23	61	168	355	913
1947 ...	1	18	51	105	289	783	—	15	62	165	363	910
	90a, 93b, 95b. Other and ill-defined chronic heart disease specified as rheumatic.											
1946 ...	—	5	4	10	31	76	1	7	7	12	35	88
1947 ...	—	5	6	8	27	81	—	4	6	11	34	87
	Total heart disease of known rheumatic origin.											
1946 ...	5	48	67	118	308	845	6	51	77	186	393	1,002
1947 ...	3	44	67	118	319	869	6	46	77	182	400	1,000
	92c. Endocarditis unspecified (including an unknown proportion of rheumatic origin).											
1946 ...	—	2	7	13	130	554	1	4	6	20	110	537
1947 ...	—	2	3	12	110	506	—	1	3	18	98	506

* Including deaths of non-civilians in England and Wales and based on total population inclusive of armed forces at home and abroad.

Table XCVII shows death rates in 1946 and 1947 from the acute and the chronic forms of rheumatic heart disease, and also from endocarditis of unspecified origin, which includes an unknown amount of chronic rheumatic heart disease. It can be assumed that practically all of the deaths at ages under 45 in this last group and from 50 to 80 per cent. of deaths at higher ages were of rheumatic origin. On that assumption the total death rates from rheumatic heart disease, acute and chronic, would be as follows :—

	0–	5–	15–	25–	45–	65 and over
Males 1946...	5	50	74	131	373–412	1,122–1,288
Males 1947...	3	46	70	130	374–407	1,122–1,274
Females 1946...	7	55	83	206	448–481	1,271–1,432
Females 1947...	6	47	80	200	449–478	1,253–1,405
Male death rate % of female 1946–47 (approximately) ...	62	94	88	64	84	90

The male death rate was less than two-thirds of the female rate at ages 0–4 and 25–44. At other ages the disparity was much less, but the female rate was always in excess.

59a, b. Rheumatoid Arthritis and Other Chronic Articular Rheumatism.—Deaths attributed to rheumatoid arthritis since 1939 have been as follows:—

Sex	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males	315	331	365	376	321	320	321	288	287
Females	981	1,122	1,002	916	953	895	945	856	834

Table XCVIII.—Rheumatoid Arthritis and Other Articular Rheumatism : Death Rates by Sex and Age. 1939 to 1947.

Year	Death Rates per Million living*											
	MALES						FEMALES					
	0–	25–	45–	55–	65–	75 and over	0–	25–	45–	55–	65–	75 and over
59a. Rheumatoid Arthritis.												
1939 ...	—	2·2	13·1	37	98	202	0·1	5·1	26·9	86	240	489
1940 ...	0·6	2·2	12·0	43	95	200	0·5	3·4	27·0	103	255	590
1941 ...	0·5	1·9	10·8	40	105	272	0·3	5·6	25·1	75	242	504
1942 ...	0·3	3·2	10·7	47	102	239	0·9	3·3	23·9	75	201	455
1943 ...	0·7	1·7	8·2	35	88	214	0·5	4·6	18·8	78	217	429
1944 ...	0·7	1·7	12·1	35	82	194	0·7	3·9	22·7	68	193	397
1945 ...	0·7	3·2	10·7	39	77	165	0·7	5·1	21·5	66	192	431
1946 ...	0·5	2·1	7·9	29	81	153	0·3	4·0	17·0	68	176	369
1947 ...	0·9	0·8	6·5	34	65	185	0·3	3·0	20·5	52	173	371
59b. Other Chronic Articular Rheumatism.												
1939 ...	0·3	1·1	4·6	14	39	125	0·3	0·7	4·3	13	31	119
1940 ...	0·1	0·5	3·3	13	36	76	—	1·2	2·8	12	52	121
1941 ...	0·1	1·1	5·0	14	38	73	0·1	0·6	1·8	13	37	138
1942 ...	—	1·1	2·5	12	30	74	—	0·4	3·9	8	31	129
1943 ...	—	1·4	3·3	10	29	93	0·1	0·4	2·8	11	34	120
1944 ...	—	2·0	0·8	9	26	71	—	0·6	5·5	8	35	119
1945 ...	—	0·8	4·4	7	32	98	—	0·1	2·0	10	34	109
1946 ...	—	0·9	1·2	10	32	93	—	0·6	3·7	13	36	143
1947 ...	—	0·9	2·7	8	25	90	0·1	0·6	2·7	6	40	124

* Including deaths of non-civilians in England and Wales, and based on total population inclusive of armed forces at home and abroad. Rates for 1939 conform with the classification in use from 1940 onwards.

Table XCVIII shows death rates per million living at various ages for each year 1939 to 1947, distinguishing deaths attributed to rheumatoid arthritis from those due to other chronic articular rheumatism. In the following table the rates in 1946–47 are expressed as percentages of those in 1939–40.

	MALES						FEMALES					
	0–	25–	45–	55–	65–	75 and over	0–	25–	45–	55–	65–	75 and over
Rheumatoid Arthritis ...	233	66	57	79	76	84	100	82	70	63	71	69
Other Chronic Articular Rheumatism	–	113	49	67	76	91	33	63	90	76	92	111

The rheumatoid arthritis rates were lower at each age over 25. On the other hand, the rates for other chronic articular rheumatism, including osteo-arthritis, showed no decrease among males aged 25–44, nor among females aged 75 and over.

61. Diabetes Mellitus.—The two previous Text volumes of the Statistical Review, for the years 1938–39 and 1940–45, discussed in some detail the effect upon the death rates from diabetes of the new method of cause selection introduced in 1940. By eliminating from statistical assignment those cases where the certifying practitioner believed that diabetes, though present, was not the underlying cause of death, the new procedure gives death rates for all ages that are just over two-thirds those given by the former system of assignment by arbitrary rules. The conversion ratio varies, however, with sex and age, and those variations have been taken into account in adjusting the rates prior to 1940 in this Review to make them uniform with those from 1940 onwards.

From the statistical data produced by the Ministry of Food in connection with medical certificates for special rations, it has been shown that the number of civilians in receipt of special rations on account of diabetes on 12th December, 1945, was 91,897 (235 per 100,000) and on 31st December, 1947, 98,208 (231 per 100,000). Further details about these diabetic sufferers by sex, age, geographical distribution and whether under treatment with insulin have been published in Studies on Medical and Population Subjects, No. 2,* where it is also estimated from Survey of Sickness records for the period May, 1946 to April, 1947, that the proportion of civilians suffering from diabetes was 239 per 100,000. The close agreement between these two independent estimates suggests that both methods have provided reliable indices of the incidence of diabetes causing appreciable disability among the population.

Civilian deaths attributed to diabetes in 1946–47 averaged 3,611 per annum so that the fatality of diabetes in a year is just under 4 per cent. This is a measure of the risk of a diabetic dying from diabetes and does not take any cognisance of those deaths where the certifying practitioner did not regard diabetes as directly leading towards death.

* "Sickness in the Population of England and Wales in 1944–47," page 43; by P. Stocks, General Register Office, 1949. (H.M.S.O., price 1s. net).

Table XCIX.—Diabetes : Death Rates by Sex and Age, 1931 to 1947.

	Death rates per million living*									C.M.I. all ages†
	0–	15–	25–	35–	45–	0–54 E.A.D.R.	55–	65–	75 and over	
Males										
1931	12	22	27	33	67	30	195	507	705	0·956
1932	10	21	28	39	65	31	199	556	802	1·008
1933	13	26	28	31	56	29	202	550	809	1·002
1934	11	22	25	28	61	28	207	555	796	0·996
1935	11	16	22	26	62	26	203	578	834	0·988
1936	11	17	24	25	72	28	212	635	1,017	1·045
1937	12	18	24	35	63	29	210	619	978	1·053
1938	8	14	20	30	58	24	193	549	936	1·000
1939	9	18	19	30	61	26	196	588	1,024	1·041
1940	12	19	20	33	55	26	207	642	1,086	1·152
1941	11	19	19	35	57	27	192	555	809	1·021
1942	10	15	24	26	51	24	157	477	765	0·908
1943	8	18	20	33	51	24	136	419	676	0·842
1944	7	14	15	22	41	19	123	422	645	0·761
1945	5	12	15	21	47	19	108	382	660	0·721
1946	5	10	11	20	35	15	116	336	612	0·633
1947	5	9	11	17	34	14	94	318	586	0·572
Females										
1931	11	24	27	40	96	37	327	713	792	0·942
1932	13	19	25	41	94	36	337	744	793	0·957
1933	12	24	26	43	94	37	327	765	826	0·972
1934	10	17	25	39	99	35	344	786	872	0·990
1935	9	20	25	35	96	35	352	807	914	1·008
1936	10	19	21	43	99	36	365	898	1,001	1·042
1937	12	20	20	36	106	36	343	857	1,054	1·045
1938	10	17	15	31	93	31	308	801	1,001	1·000
1939	12	18	21	31	98	34	352	832	1,047	1·051
1940	10	26	21	32	100	35	343	827	1,006	1·067
1941	9	23	22	33	83	32	302	760	932	0·969
1942	8	26	29	31	68	30	258	692	814	0·870
1943	6	25	30	36	80	33	243	649	772	0·843
1944	6	20	21	24	62	25	217	643	802	0·783
1945	7	16	20	28	59	24	215	663	725	0·770
1946	4	11	13	22	53	19	208	579	724	0·696
1947	4	10	11	21	48	17	197	542	736	0·663

* Including deaths of non-civilians in England and Wales and based on total populations in 1939 to 1947 inclusive of armed forces at home and abroad. Rates for years 1931 to 1939 conform with the classification method in use from 1940 onwards (conversion ratios for each sex-age group were obtained from a dual classification for years 1938 and 1939, and the resulting deaths in years 1931 to 1937 were adjusted slightly to produce the totals at all ages as shown in Table 6).

† Based on deaths of civilian males from 3rd September, 1939, and of civilian females from 1st June, 1941.

Table XCIX gives total death rates including non-civilians from 1931 onwards by sex and age with the Equivalent Average Death Rate at ages 0–54 derived from these, and the Comparative Mortality Index at all ages (civilians only). The E.A.D.R. for males aged 0–54 decreased progressively from an annual average of 30 per million in 1931–33, to 21 in 1943–45 and thereafter decreased still further to 15 in 1946 and 14 in 1947. The corresponding female rate fell from 37 in 1931–33, to 27 in 1943–45, 19 in 1946 and 17 in 1947. The C.M.I. for all ages was about unity between 1931 and 1938, and rose among males during 1939–41 and among females during 1939–40. Since then it has fallen rapidly and the mortality in 1947 in both sexes was less than two-thirds that of 1938.

Annual death rates by single years from 1940 to 1947 are compared with the rates in 1938–39 in Table C. The largest decline was among girls under 15 whose rate fell to 36 per cent. of its original level. This was one of the few groups that did not share in the increased mortality of the early war years. Each of the other groups had rates in 1947 that were between a half and three-quarters of the pre-war rates, including young women aged 15–34 who experienced high rates throughout the full period of the war.

Table C.—Diabetes : Death Rates at different Ages in 1923-25, 1931-35 and 1936-39 per cent. of those in 1920-22 ; and in each year 1940 to 1947 per cent. of those in 1938-39.

	Per cent. of corresponding rate in 1920–22			Per cent. of corresponding rate in 1938–39							
	1923–25	1931–35	1936–39	1940	1941	1942	1943	1944	1945	1946	1947
Males											
0–	71	79	64	150	138	125	100	88	63	62	62
15–	67	50	38	119	119	94	113	88	75	62	56
25–	72	47	36	105	100	126	105	79	79	58	58
35–	75	52	49	110	117	87	110	73	70	67	57
45–	76	68	65	92	95	85	85	68	78	58	57
55–	101	104	101	107	99	81	70	63	56	60	48
65–	107	134	140	113	98	84	74	74	67	59	56
75 and over ...	118	167	209	111	82	78	69	66	67	62	60
Females											
0–	69	69	69	91	82	73	55	55	64	36	36
15–	83	63	53	153	135	153	147	118	94	65	59
25–	75	60	45	117	122	161	167	117	111	72	61
35–	85	73	54	103	106	100	116	77	90	71	68
45–	95	98	98	105	87	72	84	65	62	56	51
55–	111	136	135	104	92	78	74	66	65	63	60
65–	118	179	193	101	93	85	79	79	81	71	66
75 and over ...	121	205	253	98	91	79	75	78	71	71	72

Table CI gives death rates per million at ages 45–64 and 65 and over in 1947 by regions and classes of area. The male rate was highest in the East region at both ages, lowest in Greater London at 45–64 and lowest in North II at 65 and over. The female rates were highest in North I at both ages and were lowest in Greater London at 45–64 and in the remainder of the South East at 65 and over. Rates for each sex were lowest in county boroughs ; for males they were highest in other urban districts and for females they were highest in the rural districts.

Table CI.—Diabetes Mellitus : Death Rates per million living by Sex at Ages 45-64 and 65 and over in Geographical Regions and class of Area, 1947.

Area	45–64		65 and over	
	M.	F.	M.	F.
England and Wales ...	**60**	**114**	**389**	**595**
Regional Summary :				
South East	44	75	340	510
Greater London ...	41	71	378	539
Remainder of South East	47	79	301	478
North	62	145	358	643
North I	79	200	348	836
North II	43	117	293	510
North III	58	151	352	603
North IV	62	129	381	636
Midland	62	126	458	681
Midland I	60	113	420	690
Midland II	65	151	528	663
East	105	124	570	582
South West	87	102	486	580
Wales	76	159	358	681
Wales I	72	172	347	726
Wales II	88	128	383	599
Density Summary :				
County Boroughs* ...	55	113	393	575
Urban Districts*	72	128	408	623
Rural Districts*	67	141	364	636

* Excluding Greater London.

seven per million, in Midland I and lowest, with no deaths, in Wales II. Each of the three density aggregates had a rate of four per million. The highest death rate among women was in Wales II, 51 per million, followed by the South West (45) and North II (39). The lowest rates of females were recorded in Greater London (18) and the East (20). Female mortality declined with increasing urbanisation, the rate in the rural districts being more than half as high again as the rate in the county boroughs. This relationship between mortality and urbanisation was apparent in 1940–44 and also in 1913–22 (See Text for 1940–45, page 193) and must be regarded as a constant epidemiological feature of exophthalmic goitre. Further investigation is required to distinguish the relative contributions of morbidity and fatality towards these variations in the female death rate and to determine how far these variations can throw light upon the ætiology of the disease.

63c. Myxœdema and Cretinism.—Deaths from these causes averaged 204 per annum during 1935–38 (24 males and 180 females) and 215 per annum during 1939–45 (25 males and 190 females) ; there were 198 deaths in 1946 (21 males and 177 females) and 238 in 1947 (33 males and 205 females). Deaths in single years since 1938 have been as follows :—

Sex	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males	23	29	36	31	27	18	11	23	21	33
Females ...	165	210	243	179	195	170	161	174	177	205

The age distribution of the deaths in 1946 and 1947 is shown in the following table :—

	0–	15–	45–	65 and over	All Ages
Males					
1946 ...	7	2	8	4	21
1947 ...	3	5	16	9	33
Females					
1946 ...	7	13	51	106	177
1947 ...	13	9	73	110	205

There was an increase in the number of deaths in 1947 compared with 1946 at each age except 0–14 for males and 15–44 for females. The greatest numerical increase was among women aged 45–64.

64. Diseases of the Thymus (including Status lymphaticus).—Deaths from this cause numbered 167 in 1931, 147 in 1939, 120 in 1942, 83 in 1945, 79 in 1946 and 81 in 1947.

Table CIV gives the totals of deaths in 1946 and 1947 by sex and age distinguishing those certified as due to status lymphaticus, enlarged thymus and abscess or other disease of the thymus. Almost all the deaths were of children under five and at these ages there was a definite male excess. Anæsthetic deaths said to be associated with status lymphaticus are given on page 277.

Table CIV.—Deaths (including those of non-civilians) classified to International List No. 64, Diseases of the Thymus, 1946-47.

	0–	5–	10–	15–	20–	25 and over
Males						
Status Lymphaticus ...	43	2	1	2	1	3*
Enlarged Thymus	38	—	—	2	1	—
Abscess of Thymus and other diseases in 64	5	—	—	1	1	—
Total	**86**	**2**	**1**	**5**	**3**	**3**
Females						
Status Lymphaticus ...	27	—	—	1	1	—
Enlarged Thymus	25	1	—	3	—	—
Abscess of Thymus and other diseases in 64	2	—	—	—	—	—
Total	**54**	**1**	—	**4**	**1**	—

* Ages 42, 43, 47.

65a. Addison's Disease not specified as Tuberculous.—Although this disease usually results from tuberculous damage to the adrenal cortex, it is relatively uncommon for tuberculosis to be mentioned as the cause on death certificates. Out of 1,590 deaths attributed to Addison's Disease in the eight years 1938–45 only 191, or 12 per cent., had mention of tuberculosis. When tuberculosis is mentioned, assignment is to No. 21a of the International List (5th Revision).

The deaths of civilians assigned to Addison's Disease, distinguishing between 65a and 21a in 1938, 1945, 1946 and 1947, were as follows :—

	1938	1945	1946	1947
Males				
65a	77	52	46	42
21a	12	7	12	16
Females				
65a	112	99	81	107
21a	14	10	8	20
Total	**215**	**168**	**147**	**185**

The age distribution of deaths in the two years 1946–47 is given below :—

	0–14	15–44	45–64	65 and over	All Ages
Males					
65a ...	3	38	35	12	88
21a ...	—	8	18	2	28
Females					
65a ...	—	79	82	27	188
21a ...	1	7	18	2	28
Total	**4**	**132**	**153**	**43**	**332**

63b. **Exophthalmic Goitre.**—Deaths from this cause averaged 1,405 per year during 1935–39 (166 male, 1,239 female) and 859 per year during 1940–45 (118 male, 741 female). In 1946 there were 77 deaths of males and 590 of females, and in 1947 75 of males and 616 of females, totalling 667 and 691 deaths respectively in the two years.

Table CII.—Exophthalmic Goitre : Death Rates by Sex and Age in each year 1931 to 1947.

Year	Death rates per million living*								C.M.I. All ages†
	0–	15–	25–	35–	45–	55–	65–	75 and over	
Males									
1931	0	2	4	7	13	18	12	11	0·772
1932	—	3	6	9	14	24	16	3	0·911
1933	0	4	5	10	14	20	16	8	0·917
1934	0	2	5	12	17	23	15	7	0·976
1935	—	3	5	8	18	23	20	12	0·973
1936	—	4	6	12	21	25	14	5	1·083
1937	—	2	6	8	17	24	19	6	0·986
1938	—	1	4	13	15	24	22	5	1·000
1939	0	1	4	8	19	28	25	12	1·014
1940	0	1	5	10	15	23	26	7	1·022
1941	—	2	4	6	15	22	15	17	0·890
1942	—	1	2	8	11	18	16	5	0·721
1943	0	2	1	4	9	20	16	6	0·695
1944	—	—	1	4	9	14	12	4	0·539
1945	0	1	1	2	11	14	12	8	0·571
1946	0	2	1	4	6	9	18	2	0·444
1947	—	1	1	2	7	10	13	7	0·426
Females									
1931	1	19	30	60	104	128	103	53	0·935
1932	1	18	31	61	116	136	113	35	0·982
1933	1	19	30	55	123	125	119	44	0·974
1934	1	16	26	55	120	152	139	50	1·018
1935	1	14	30	61	117	153	152	45	1·050
1936	1	14	26	55	123	165	174	83	1·120
1937	1	13	28	52	112	172	188	66	1·097
1938	1	12	21	40	105	160	173	67	1·000
1939	0	12	18	45	110	140	183	89	0·987
1940	0	10	17	32	83	134	148	86	0·837
1941	0	7	14	31	69	99	112	64	0·663
1942	1	6	11	29	59	94	95	74	0·604
1943	—	6	10	22	57	90	107	45	0·565
1944	—	2	9	17	47	65	88	49	0·447
1945	—	3	9	13	43	75	80	42	0·434
1946	—	4	7	12	38	76	101	52	0·450
1947	0	2	6	13	40	71	110	68	0·462

* Including deaths of non-civilians in England and Wales, and based on total populations inclusive of armed forces at home and abroad in 1939 to 1947. Rates for 1931–39 conform with the method of classification from 1940 onwards.

† Based on deaths of civilian males from 3rd September, 1939, and of civilian females from 1st June, 1941.

Table CII shows that the C.M.I. for males has been falling steadily from a maximum of 1·022 reached in 1940, the index for 1947, 0·426, being less than half what it was before the war. For females the index reached its highest level, 1·120, in 1936, and then fell steadily each year to 0·434 in 1945. In contrast with males, however, there was no further fall in 1946 and 1947, the indices for the two years being 0·450 and 0·462.

The annual average rates at different ages in 1936–38 and 1946–47 are compared below.

	15–	25–	35–	45–	55–	65–	75 and over
Males							
1936–38	2	5	11	18	24	18	5
1946–47	2	1	3	7	10	16	5
1946–47 % of 1936–38 ...	100	20	27	39	42	89	100
Females							
1936–38	13	25	49	113	166	178	72
1946–47	3	7	13	39	74	106	60
1946–47 % of 1936–38 ...	23	28	27	35	45	60	83

Apart from males aged 15–24, the degree of improvement decreased with advancing age in both sexes.

Table CIII.—Exophthalmic Goitre : Death Rates per million living, in Regions and different classes of Area, 1947.

Area	Death rate (civilians)		Area	Death rate (civilians)	
	M.	F.		M.	F.
England and Wales	**4**	**28**	East	4	20
			South West	4	45
			Wales I	2	33
			Wales II	–	51
Regional Summary :					
Greater London	3	18			
Remainder of South East ...	2	27			
North I	5	32			
North II	3	39			
North III	3	26	**Density Summary :**		
North IV	5	32	County Boroughs* ...	4	24
Midland I	7	27	Other Urban Districts* ...	4	32
Midland II	3	26	Rural Districts*	4	37

* Excluding Greater London.

Table CIII gives death rates for 1947 by region and by class of area. As on previous occasions when regional analyses have been made, considerable disparities are revealed between the experience of different areas, especially with regard to the mortality of females. The death rate for males was highest,

The number of certificates with mention of tuberculosis totalled 56 in two years, 28 of each sex ; males and females had the same age distribution with two-thirds of the deaths at ages 45–64. Of the 276 deaths without specific mention of tuberculosis more than two-thirds were of females and two-fifths were at ages 45–64.

The deaths of civilians from tuberculosis of all forms in the two years totalled 45,463, of which 6,702 were from non-respiratory forms. The addition of all the 276 deaths from Addison's Disease not specified as, but possibly due to, tuberculosis would increase the total mortality ascribed to tuberculosis by 0·6 per cent. and would increase the non-respiratory group by four per cent.

66b : 1. Pink Disease.—Included under this number are deaths certified as due to acrodynia, dermato-neuritis, erythrœdema, erythrœdema polyneuritica, and pink disease. On the basis of the method of classification in use from 1940 onwards the number of deaths since 1931 have been as follows :—

Year	Males	Females	Persons	Year	Males	Females	Persons
1931 ...	11	15	26	1940	23	26	49
1932 ...	21	12	33	1941	22	25	47
1933 ...	23	19	42	1942	28	22	50
1934 ...	26	20	46	1943	20	29	49
1935 ...	26	20	46	1944	28	22	50
1936 ...	31	44	75	1945	24	24	48
1937 ...	19	33	52	1946	19	29	48
1938 ...	34	29	63	1947	58	45	103
1939 ...	21	33	54				

During the four years 1936–39 deaths averaged 61 per annum, but during 1940–46 they fell to 49 per annum. In 1947 deaths suddenly and unaccountably rose to 103.

The age distribution of the deaths in 1946–47 was as follows :—

	Total	Under 4 weeks	4 weeks –3 months	3–6 months	6–12 months	1 year	2 years	3 years	4 years	5 years and over
1946										
Males	19	—	—	2	11	6	—	—	—	—
Females ...	29	—	1	4	17	7	—	—	—	—
1947										
Males	58	—	—	2	41	14	1	—	—	—
Females ...	45	—	—	—	32	11	1	—	1	—

Although a high proportion of the deaths from pink disease were in infancy, the large increase in 1947 can be only partly explained by the higher birth rates of 1946 and 1947. Death rates from pink disease at ages under 1 year per million related live births were 44·7 in 1946 and 84·2 in 1947.

The increased mortality of 1947 was not confined to any one part of the year as the following table of deaths in each quarter shows.

Quarter	1944	1945	1946	1947
March	17	9	14	24
June	12	23	10	26
September	13	12	15	33
December	8	6	8	21

It has been shown elsewhere* that there were significant differences in the death rates of the various regions of England and Wales and that the additional deaths in 1947 were not confined to any one region but were distributed over the whole country.

66b : 2. Idiopathic Steatorrhœa.—The numbers of deaths (including non-civilians) classified to this group, which includes cœliac disease, sprue and psilosis, in successive years from 1939 to 1947 were 34, 25, 57, 69, 65, 56, 78, 88, 62.

The age distribution of deaths in 1946 and 1947 by sex is shown below :—

	All Ages	0–4	5–44	45–64	65 and over
1946					
Males ...	37	15	13	4	5
Females ...	51	22	16	9	4
1947					
Males ...	36	17	9	8	2
Females ...	26	16	5	4	1

Almost half the deaths were of children under five. The total deaths of males were practically the same in both years, but deaths of females decreased from 51 in 1946 to 26 in 1947.

70. Rickets.—Deaths classified to this cause numbered 222 in 1931, 71 in 1938, 27 in 1945, and 16 in each year 1946 and 1947. The deaths in 1946–47 were distributed by sex and age as follows :—

Sex	All Ages	Under 3 months	3–6 months	6–12 months	1 year	2 years and over
Males	15	1	3	4	5	2
Females ...	17	1	—	8	2	6

73a. Pernicious Anæmia.—Deaths of civilians from this cause numbered 1,771 in 1938, 1,827 in 1944, 2,099 in 1945, 1,470 in 1946, and 1,482 in 1947. There has been a considerable reduction in mortality in 1946 and 1947 compared with previous years. This is further indicated by the C.M.I. (Table CV) which showed no tendency to decline during the years 1931 (male 1·097, female 1·094) to 1945 (male 1·040, female 1·031), but fell abruptly during the next two years to 0·673 for males and 0·718 for females in 1947. It is difficult to explain this sudden reduction in mortality since no important advances in the treatment of the disease were made during 1946 and 1947 and folic acid had not become generally available by that time.

Table CV gives annual death rates by sex and age from 1931 to 1947. From 1932 to 1938 mortality was falling at ages under 65, and after an interruption during 1939–42 the decline was resumed, and continued in 1946 and 1947. At 65–74 the rate was much the same in 1945 as in 1931 although it had risen during the intermediate years and at ages 75 and over the rates tended to rise until 1941, with no consistent change in the next four years. In 1946, however, there was a sharp fall in mortality at both these ages. The bulk of the deaths

* Logan, W. P. D. Mortality from Pink Disease in 1923–47. *Lancet*, April 9, 1949.

attributed to pernicious anæmia are of persons aged 65 and over, and a substantial reduction in the death rates at those ages has great effect upon the total mortality from the disease.

Table CV.—Pernicious Anæmia : Death Rates by Sex and Age in each year, 1931 to 1947.

Year	Death rates per million living*									C.M.I. all ages †
	0–	15–	25–	35–	45–	0–54 E.A.D.R.	5 5–	65–	75 and over	
Males										
1931 ...	0	1	4	10	35	9	123	240	233	1·097
1932 ...	0	2	4	9	44	11	132	285	263	1·252
1933 ...	0	1	2	13	44	11	119	243	248	1·138
1934 ...	0	2	3	9	36	9	113	236	254	1·073
1935 ...	0	2	3	8	29	8	101	253	262	1·043
1936 ...	0	2	2	9	26	7	85	242	312	0·996
1937 ...	0	2	1	7	26	7	88	214	300	0·928
1938 ...	0	1	4	7	24	7	81	246	334	1·000
1939 ...	1	1	4	6	26	7	94	248	324	1·039
1940 ...	0	1	2	8	32	8	95	285	416	1·199
1941 ...	0	2	3	7	27	7	97	322	470	1·291
1942 ...	0	1	2	7	16	5	93	311	404	1·186
1943 ...	0	0	4	4	23	6	69	262	400	1·057
1944 ...	—	1	1	5	17	4	60	234	403	0·950
1945 ...	0	0	1	6	15	4	78	246	440	1·040
1946 ...	0	0	2	2	10	3	38	165	285	0·643
1947 ...	—	—	1	2	9	2	44	163	337	0·673
Females										
1931 ...	0	3	10	28	66	19	164	270	190	1·094
1932 ...	0	3	9	30	76	21	178	309	274	1·251
1933 ...	0	2	11	29	63	19	158	300	265	1·160
1934 ...	0	3	7	28	65	19	147	284	301	1·132
1935 ...	0	3	10	23	56	17	139	287	314	1·095
1936 ...	0	2	7	25	60	70	115	265	301	1·015
1937 ...	1	3	8	20	46	14	127	291	353	1·037
1938 ...	0	2	8	19	43	13	106	287	372	1·000
1939 ...	0	3	8	17	49	14	123	299	400	1·120
1940 ...	0	2	8	19	47	14	145	323	446	1·176
1941 ...	0	4	8	23	58	17	138	380	509	1·320
1942 ...	0	3	8	19	41	13	134	330	495	1·184
1943 ...	—	2	5	13	38	11	97	316	491	1·057
1944 ...	—	1	5	11	30	9	83	289	399	0·908
1945 ...	0	2	3	9	40	10	95	299	505	1·031
1946 ...	—	2	2	9	20	6	68	212	407	0·750
1947 ...	—	1	3	4	17	5	65	201	421	0·718

* Including deaths of non-civilians in England and Wales and based on total populations in 1939 to 1947 inclusive of armed forces at home and abroad. Rates for years 1931 to 1939 conform with the classification in use from 1940 onwards. (Conversion ratios for each sex-age group were obtained from a dual classification for years 1937 to 1939, and the resulting deaths in years 1931 to 1936 were adjusted slightly to produce the totals at all ages as shown in Table 6.)

† Based on deaths of civilian males from 3rd September, 1939, and of civilian females from 1st June, 1941.

Table CVI gives death rates in 1947 by sex, age and geographical region. At ages 15–44 the highest death rate of males was in Wales I and the highest death rates of females were in North I and Midland I. At ages 45–64 Wales I had the highest rates for each sex, followed for males by North IV and for females by North I. At ages 65 and over the highest death rate of males was in North II, followed by Wales I. The highest female rate was in Wales I, followed by Wales II.

Deaths due to sub-acute combined degeneration of the cord without mention of pernicious anæmia on the death certificate are classified to No. 82 : 2 within the section of Diseases of the Nervous System. It may be assumed that practically all of these were associated with pernicious anæmia although

Table CVI.—Pernicious Anæmia : Death Rates per million living by Sex and Age in Geographical Regions, 1947.

Area	All ages		0–		15–		45–		65 and over	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
England and Wales	**27**	**43**	—	—	**1**	**3**	**24**	**39**	**210**	**269**
Regional Summary :										
South East	17	32	—	—	0	2	11	24	143	199
Greater London	14	26	—	—	—	2	9	19	132	177
Remainder of South East	21	39	—	—	1	1	15	30	154	222
North	35	54	—	—	1	3	32	54	282	348
North I	27	48	—	—	2	6	29	68	215	291
North II	43	54	—	—	—	3	21	56	391	336
North III	25	49	—	—	3	—	20	30	198	361
North IV	41	59	—	—	1	3	42	63	329	359
Midland	23	34	—	—	1	6	21	30	202	223
Midland I	25	37	—	—	2	6	26	35	212	244
Midland II	21	28	—	—	—	5	14	21	184	184
East	26	36	—	—	3	—	33	30	152	222
South West	26	49	—	—	—	4	24	36	170	261
Wales	50	76	—	—	4	4	59	73	334	497
Wales I	50	80	—	—	5	5	67	99	335	526
Wales II	48	64	—	—	—	—	38	11	332	445

the certifying practitioner did not say so. Deaths assigned to No. 82 : 2 averaged 95 per year in 1935–39 and 81 per year during 1940–45 (106, 80, 65, 70, 80, 86 in single years). The numbers of deaths in 1946 and 1947, however, were 55 and 63, a sudden reduction comparable in degree with that of pernicious anæmia.

74a, b. Leukæmia and Aleukæmia.—Deaths from leukæmia and aleukæmia combined totalled 1,464 in 1946 and 1,474 in 1947. The annual average number of deaths was 762 in 1931–35, 980 in 1936–39, 1,160 in 1940–45, and 1,460 in 1946–47. The deaths in 1946 and 1947 were distributed by sex and age in the following way :—

	MALE				FEMALE			
	0–14	15–44	45–64	65 and over	0–14	15–44	45–64	65 and over
74a. Leukæmia								
1946								
Civilian ...	127	172	279	141	94	163	227	136
Non-Civilian	—	39	—	—	—	3	—	—
1947								
Civilian ...	150	166	234	161	113	152	227	166
Non-Civilian	—	19	1	—	—	1	—	—
74b. Aleukæmia								
1946								
Civilian ...	10	11	10	9	7	18	9	6
Non-Civilian	—	2	—	—	—	1	—	—
1947								
Civilian ...	11	3	12	11	9	11	17	9
Non-Civilian	—	1	—	—	—	—	—	—
Total (2 years) ...	**298**	**413**	**536**	**322**	**223**	**349**	**480**	**317**

Table CVII shows that except for 1941 the C.M.I. for each sex has been increasing more or less steadily since 1931, though the male index was not quite as high in 1947 as in the two previous years. In both sexes the C.M.I. in 1946 and 1947 was about double that of 1931. Death rates at different ages in 1946–47 are expressed below as percentages of those in 1931–35.

Table CVII.—Leukæmia and Aleukæmia : Death Rates by Sex and Age in each year, 1931 to 1947.

Year	Death rates per million living*									C.M.I. all ages†
	0–	5–	15–	25–	35–	45–	55–	65–	75 and over	
Males										
1931	26	13	11	14	13	24	32	48	34	0·695
1932	23	15	12	11	15	26	38	46	30	0·710
1933	23	17	14	10	12	22	40	61	21	0·735
1934	29	16	14	14	21	23	41	62	46	0·833
1935	28	18	18	15	12	27	35	56	33	0·808
1936	30	16	20	12	16	25	54	65	48	0·894
1937	39	17	12	13	22	28	51	59	39	0·904
1938	34	19	15	15	22	30	47	86	41	1·000
1939	38	18	16	16	16	28	57	76	37	0·957
1940	38	19	16	16	22	34	52	59	66	1·033
1941	37	22	18	17	17	25	48	64	43	0·973
1942	36	27	17	16	21	30	54	65	59	1·119
1943	42	26	16	16	21	38	56	79	70	1·218
1944	39	24	14	15	22	36	70	79	63	1·215
1945	45	21	21	18	20	38	60	104	71	1·291
1946	39	25	22	22	25	50	80	82	73	1·364
1947	49	26	15	19	24	42	68	99	68	1·283
Females										
1931	21	12	7	10	11	24	28	28	14	0·723
1932	24	10	9	8	12	21	29	39	21	0·761
1933	17	12	9	11	14	19	37	35	20	0·804
1934	24	13	6	11	15	22	34	41	16	0·825
1935	20	14	10	9	15	23	38	39	36	0·876
1936	21	12	11	14	17	29	44	40	38	0·987
1937	23	12	9	13	15	26	35	48	28	0·914
1938	28	12	14	13	18	29	32	43	55	1·000
1939	25	14	12	13	15	25	41	56	52	1·053
1940	35	13	13	11	19	25	38	57	45	1·043
1941	25	13	14	10	17	21	42	47	42	0·964
1942	32	12	12	13	19	32	45	45	36	1·075
1943	25	16	15	14	15	31	41	57	44	1·084
1944	27	16	14	13	20	32	47	56	41	1·147
1945	35	18	14	15	25	26	54	61	44	1·251
1946	31	19	15	18	23	36	53	63	39	1·304
1947	37	21	15	14	21	38	53	72	56	1·368

* Including deaths of non-civilians in England and Wales, and based on total populations inclusive of armed forces at home and abroad in 1939 to 1947. Rates for 1931 to 1939 conform with the method of classification from 1940 onwards.

† Based on deaths of civilian males from 3rd September, 1939, and of civilian females from 1st June, 1941.

Sex	0–	5–	15–	25–	35–	45–	55–	65–	75 and over
Males	171	161	134	160	168	189	199	166	215
Females	160	164	183	163	164	170	160	185	222

Thus both sexes and almost all age groups have experienced a similar increase in mortality.

The male death rates have persistently tended to exceed the female, the percentage ratio of male to female death rates in 1931–35 and in 1946–47 being as follows :—

Period	0–	5–	15–	25–	35–	45–	55–	65–	75 and over
1931–35	122	130	168	131	109	112	112	150	153
1946–47	129	128	123	128	111	124	140	134	148

The male excess at ages 15–24 and from 65 upwards has become less, while at ages under five and between 45 and 65 it has increased. In the Text for 1940–45 it was observed that when death rates in 1945 were compared with those of 1935 there had been a larger increase in the mortality of men than of women at older ages, suggesting that the rising death rates from leukæmia could not be wholly accounted for by improving diagnosis. Comparison between 1946–47 and 1931–35, however, does not show any fundamental difference between the two sexes in regard to their increased mortality from this cause.

Table CVIII gives death rates in 1947 by sex, age and geographical region. At ages under 15, Wales I had the highest death rate for boys and the South East (excluding Greater London) for girls. At 15–44 Wales I and Midland II had the highest male rates and Wales II the highest female rate. At 45–64 the male rate was highest in the South West, the female rate in the South East (excluding Greater London). At ages 65 and over the rates for both sexes were highest in Greater London.

Table CVIII.—Leukæmia and Aleukæmia: Death Rates per million living by Sex and Age in Geographical Regions, 1947.

Area	All ages		0–		15–		45–		65 and over	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
England and Wales	**38**	**32**	**34**	**27**	**20**	**17**	**53**	**45**	**89**	**66**
Regional Summary :										
South East	41	38	37	33	18	19	61	51	109	91
Greater London	44	36	40	26	18	20	67	36	120	111
Remainder of South East	38	42	32	42	17	17	53	70	98	70
North	35	27	35	30	20	16	46	36	73	48
North I	37	25	27	16	24	16	50	38	102	53
North II	33	23	38	20	23	14	57	37	16	37
North III	33	30	31	29	17	19	40	43	96	47
North IV	35	28	39	39	19	14	46	31	63	49
Midland	34	30	28	16	20	16	48	53	80	65
Midland I	31	30	24	22	15	16	51	50	83	58
Midland II	38	31	37	3	29	17	41	58	75	79
East	33	22	23	19	23	14	43	30	76	38
South West	47	34	25	30	22	19	76	56	113	40
Wales	41	23	53	15	25	14	49	35	65	48
Wales I	42	17	58	10	29	10	48	27	48	42
Wales II	39	37	38	27	14	26	50	53	102	58

77. Alcoholism and 124. Cirrhosis of the Liver.—No. 77 of the International List includes all deaths where alcoholism was stated to be the underlying cause, with the one exception that deaths certified as resulting from alcoholic cirrhosis of the liver or from cirrhosis due to alcoholism are classed to No. 124a. In the absence of mention of alcoholism assignment is made to No. 124b. For deaths where alcoholism is certified only as an associated condition assignment is not to No. 77 but to the underlying cause as stated by the certifier.

Table CIX.—Deaths from or connected with Alcoholism : 1946 and 1947.

		Deaths of Civilians				Non-civilians	
		1946		1947		1946–47	
		M.	F.	M.	F.	M.	F.
77.	Attributed solely to alcoholism or to some disease stated to be due to alcoholism.						
	0–	—	—	—	—	—	—
	25–	1	—	3	2	—	—
	35–	9	1	10	2	—	—
	45–	17	—	19	5	—	—
	55–	8	4	3	5	—	—
	65–	4	4	5	4	—	—
	75 and over ...	—	1	—	1	—	—
	All ages ...	**39**	**10**	**40**	**19**	—	—
	Attributed to other causes with mention of alcoholism as contributory.						
	0–	1	—	1	—	2	—
	25–	—	3	1	—	1	—
	35–	17	2	10	1	—	—
	45–	13	3	23	7	—	—
	55–	22	7	22	3	—	—
	65–	20	2	15	7	—	—
	75 and over ...	5	1	2	4	—	—
	All ages ...	**78**	**18**	**74**	**22**	**3**	—
13b.	Tuberculosis (respiratory)	1	—	—	—	—	—
30.	Syphilis	2	—	—	—	—	—
33.	Influenza	2	—	—	—	—	—
45–55.	Cancer	2	—	—	—	—	—
65a.	Addison's disease	—	—	—	1	—	—
83a.	Cerebral hæmorrhage	1	—	—	—	—	—
83b.	Cerebral thrombosis	1	—	—	1	—	—
90b.	Acute pericarditis	—	—	1	—	—	—
92a.	Aortic valvular disease	—	—	1	—	—	—
92c.	Endocarditis	1	—	—	—	—	—
93c:1.	Cardiovascular degeneration	2	—	2	—	—	—
93c:2.	Myocardial degeneration (fatty)	—	—	1	—	—	—
93c:3.	Other myocardial degeneration	6	—	2	—	—	—
93d.	Myocarditis (unspecified)	2	—	—	—	—	—
94a.	Diseases of the coronary arteries	1	—	1	—	—	—
95a.	Functional heart disease	1	—	—	—	—	—
97.	Arteriosclerosis	1	—	—	—	—	—
99.	Mesenteric thrombosis	—	—	1	—	—	—
106.	Bronchitis	1	1	1	1	—	—
107.	Broncho-pneumonia	1	1	1	1	—	—
108.	Lobar pneumonia	2	—	—	1	—	—
112.	Asthma	1	—	—	—	—	—
117a.	Ulcer of stomach	1	—	—	—	—	—
117b.	Ulcer of duodenum	—	—	1	—	—	—
120a.	Enteritis and diarrhœa	—	—	1	—	—	—
122a.	Hernia	1	—	—	—	—	—
122b.	Intestinal obstruction	1	—	—	—	—	—
124a.	Alcoholic cirrhosis of the liver	37	11	47	13	—	—
125b.	Infective hepatitis...	—	1	—	—	—	—
127a.	Cholecystitis	—	1	—	—	—	—
130.	Acute nephritis	1	—	—	—	—	—
131b.	Chronic interstitial nephritis	—	—	—	1	—	—
133a.	Pyelitis	—	—	1	—	—	—
163a b.	Suicide by analgesic drugs	—	—	1	—	—	—
163b.	Suicide by poisonous gas	—	—	—	1	—	—
170.	Motor vehicle accidents	—	—	1	—	—	—
179.	Acute accidental poisoning	1	—	—	—	—	—
182.	Accidental mechanical suffocation	2	1	4	—	—	—
183.	Accidental drowning	1	—	—	—	1	—
186.	Accidental injury by fall	4	2	6	2	2	—
195d.	Other accidents	1	—	1	—	—	—
	Total	**117**	**28**	**114**	**41**	**3**	—

Table CIX sets out, by sex and age, all deaths in 1946 and 1947 certified as due to or as associated with alcoholism. Alcoholic cirrhosis (124a) is shown within the latter group, though it may be assumed that alcoholism was the underlying cause of death.

In the two years, 118 deaths were certified as due to alcoholism (No. 77) and a further 108 were certified as due to alcoholic cirrhosis (No. 124a). Deaths attributed to other causes but with alcoholism mentioned as a contributory condition numbered 87, of which 68 were civilian males.

Table CX.—Deaths from or associated with Alcoholism : Death Rate from the Combined Causes, 1921 to 1947.

Year	Number of deaths (including non-civilians)										Death rate per million persons† returned as alcoholism or associated therewith
	Alcoholism* 75(1) 77(2)		Returned as connected with alcoholism*								
			Cirrhosis of Liver 124a		Heart diseases 90–95		Violent deaths 163–198		Other causes		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1921 ...	127	55	100	54	41	17	61	11	125	56	17
1922 ...	117	47	103	47	41	14	52	16	125	59	16
1923 ...	104	47	98	54	22	12	46	16	106	57	15
1924 ...	94	33	90	57	36	8	44	7	120	53	14
1925 ...	95	55	87	49	25	19	34	6	90	48	13
1926 ...	76	39	82	50	31	20	36	17	90	58	13
1927 ...	84	24	162	101	40	22	37	14	176	92	19
1928 ...	74	34	210	110	54	34	30	10	205	102	22
1929 ...	85	49	175	83	69	38	41	11	206	75	21
1930 ...	49	45	144	71	46	25	35	10	147	75	16
1931 ...	40	41	162	99	45	35	24	2	136	45	16
1932 ...	61	34	115	62	42	19	18	4	99	45	12
1933 ...	43	30	115	77	52	19	24	10	79	35	12
1934 ...	33	19	125	84	38	22	17	9	97	50	12
1935 ...	50	23	139	62	46	30	17	8	91	57	13
1936 ...	32	27	133	64	48	26	22	4	96	51	12
1937 ...	54	48	135	72	51	29	29	12	62	43	13
1938 ...	44	28	127	65	50	34	25	6	75	27	12
1939 ...	51	29	111	50	52	30	31	12	57	36	11
1940 ...	88	59	127	51	20	13	27	4	36	13	11
1941 ...	77	42	95	46	13	4	30	5	36	11	9
1942 ...	51	18	63	14	7	2	17	2	16	8	5
1943 ...	50	14	49	20	7	2	14	2	22	7	5
1944 ...	44	14	59	9	5	1	21	1	23	4	5
1945 ...	19	8	46	11	4	1	22	3	21	3	3
1946 ...	39	10	37	11	13	—	10	3	19	4	4
1947 ...	40	19	47	13	8	—	15	3	6	6	4

* From 1940 onwards deaths from *any* cause certified as " due to alcoholism " are classified to No. 77 or No. 124(a); but this was not the case in years prior to 1940.

† Based on deaths of civilian males from 3rd September, 1939, and of civilian females from 1st June, 1941.

(1) International List No. (fourth revision).

(2) International List No. (fifth revision).

International List Numbers for other causes above are identical in fourth and fifth revisions.

Table CX, which gives annual numbers of deaths and death rates from alcoholism or associated with alcoholism between 1921 and 1947, shows, in the last column, that within this range of years the total combined mortality was highest in 1928 and 1929 with rates of 22 and 21 per million, decreasing to 16 in 1930–31 and to 12 in 1932. Little further reduction took place until 1942, when the rate dropped to five. It was three in 1945 and four in both 1946 and 1947.

For comparison, the numbers of deaths and death rates per million from cirrhosis of liver *without* mention of alcoholism amongst civilians in each year from 1938 to 1947 are shown below :—

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males										
Number ...	681	667	692	567	479	476	427	452	443	480
Rates ...	34	34	38	33	29	29	26	28	24	24
Females										
Number ...	389	388	333	286	277	286	268	263	286	302
Rates ...	18	18	15	13	13	13	12	12	13	14

The male rate in 1947 was just under and the female rate just over three-quarters of the corresponding rate in 1938. By contrast the death rates from cirrhosis certified as alcoholic decreased from seven to two per million for males and from three to one per million for females (Table 7). Nevertheless there was some correspondence between the movements of the two groups, both falling sharply early in the war and both tending to rise slightly in 1947, and it must be supposed that a large proportion of deaths certified as from cirrhosis with no mention of alcoholism on the death certificate were in fact of alcoholic origin.

83. Intra-cranial lesions of Vascular Origin (and 86. Convulsions in Children).—Deaths from the causes comprising No. 83 totalled 54,358 in 1946 and 58,248 in 1947, compared with 52,169 in 1945. As will be seen, the large increase in 1947 was chiefly in the group 83 b, c, cerebral embolism, thrombosis and softening. The crude death rates of civilians in the three years 1945, 1946 and 1947 were, for the whole group, 1,363, 1,230, 1,260 per million for males and 1,367, 1,430, 1,511 for females. The comparative mortality index, also based on civilian death rates, was 0·959 for males in 1946, almost the same as in 1945; but for females it rose from 1·000 to 1·044. The contrast may have been due to the male population receiving large numbers of healthy men by demobilization. In 1947 the indices increased considerably for each sex, to 1·020 for males and 1·090 for females.

Table CXI.—Cerebral Hæmorrhage, Embolism, Thrombosis and Ill-defined Paralyses: Death Rates by Sex and Age. 1931-35 and each year 1936 to 1947.

Period	Death rate per million living*									C.M.I. all ages*
	0–	25–	35–	45–	55–	60–	65–	70–	75 and over	
	83a. Cerebral Hæmorrhage—MALES.									
1931–35	2·7	14	79	402	1,127	2,053	3,930	6,690	11,937	1·148
1936	3·2	11	76	395	1,035	2,020	3,462	6,004	11,254	1·066
1937	1·9	12	79	385	1,067	1,943	3,381	5,931	10,647	1·043
1938	2·3	17	71	386	1,039	1,866	3,312	5,718	9,941	1·000
1939	2·5	20	79	425	1,127	1,969	3,486	5,727	10,102	1·029
1940	4·7	19	79	410	1,135	2,104	3,608	5,682	10,643	1·071
1941	4·7	25	79	375	1,027	1,915	3,326	5,098	9,783	0·981
1942	7·1	27	82	409	952	1,887	3,188	5,000	9,072	0·948
1943	7·9	40	90	375	1,009	1,760	3,179	4,989	8,487	0·922
1944	10·4	34	107	408	1,013	1,866	3,235	4,985	8,639	0·946
1945	7·4	30	96	399	1,011	1,778	3,201	5,004	8,706	0·935
1946	5·6	22	73	383	977	1,816	3,040	5,017	9,007	0·929
1947	8·5	20	78	383	960	1,789	3,021	5,114	9,474	0·947
	83a. Cerebral Hæmorrhage—FEMALES.									
1931–35	1·9	15	78	465	1,085	1,937	3,431	5,836	10,815	1·130
1936	1·9	15	86	449	1,112	1,910	3,351	5,401	10,000	1·078
1937	2·6	12	74	448	1,066	1,848	3,193	5,138	9,306	1·032
1938	1·7	12	80	435	1,013	1,881	2,951	5,020	9,162	1·000
1939	2·6	17	77	456	1,140	1,906	3,208	5,237	9,274	1·027
1940	3·3	13	86	506	1,150	1,928	3,379	5,474	9,538	1·083
1941	3·4	20	80	498	1,067	1,865	3,173	4,958	8,909	1·016
1942	6·3	16	85	479	1,088	1,788	3,138	5,085	8,534	0·999
1943	6·9	23	88	482	1,141	1,739	3,005	4,971	8,687	0·998
1944	6·3	20	89	471	1,107	1,825	3,075	4,990	8,456	0·992
1945	5·4	20	85	460	1,001	1,756	3,035	4,904	8,663	0·981
1946	5·3	17	93	488	1,111	1,841	3,038	5,164	9,032	1·026
1947	6·9	22	96	449	1,004	1,832	3,070	5,130	9,494	1·034

Table CXI (*contd.*)

	0·7	5	17	90	298	622	1,336	2,528	5,289	0·824
83b, c. Cerebral Embolism, Thrombosis and Softening—MALES.										
1931–35										
1936	0·6	5	14	106	335	739	1,505	2,832	6,245	0·949
1937	0·6	3	15	96	357	779	1,469	2,931	6,197	0·966
1938	0·4	4	12	93	342	764	1,695	3,111	6,227	1·000
1939	0·4	3	17	106	409	878	1,809	3,420	6,922	1·073
1940	0·9	4	13	105	416	887	1,923	3,530	7,655	1·180
1941	0·8	6	15	105	340	838	1,588	2,964	6,787	1·032
1942	1·1	5	14	96	380	799	1,683	2,977	6,578	1·029
1943	1·0	4	12	90	348	803	1,571	2,963	6,186	0·983
1944	1·2	7	13	98	347	819	1,691	2,753	6,462	1·005
1945	0·8	3	12	92	366	829	1,663	3,088	6,452	1·027
1946	1·9	1	13	86	364	850	1,623	3,073	6,756	1·045
1947	1·8	3	9	100	350	881	1,890	3,559	8,088	1·202
83b, c. Cerebral Embolism, Thrombosis and Softening—FEMALES.										
1931–35	0·4	4	17	90	249	512	1,101	2,082	5,144	0·841
1936	0·6	9	18	108	320	616	1,350	2,586	5,805	0·994
1937	0·3	4	15	96	316	638	1,283	2,553	5,840	0·993
1938	0·7	4	15	84	297	714	1,322	2,463	5,938	1·000
1939	1·1	3	22	115	319	742	1,444	2,794	6,511	1·076
1940	1·3	4	21	118	356	749	1,585	2,970	6,829	1·170
1941	0·3	3	19	110	320	728	1,421	2,686	6,197	1·066
1942	0·8	2	16	99	351	664	1,394	2,610	6,249	1·053
1943	1·8	7	17	108	303	651	1,372	2,456	5,960	1·013
1944	0·8	3	15	99	299	674	1,369	2,575	6,333	1·049
1945	0·6	4	18	100	285	699	1,348	2,707	6,416	1·068
1946	1·2	3	11	95	284	646	1,456	2,776	6,882	1·114
1947	0·3	2	13	94	335	674	1,525	3,137	7,867	1·244
83d, e. Hemiplegia, paralyses and cerebral effusions of unstated origin—MALES.										
1931–35	1·0	0·6	4	17	51	111	230	409	881	1·277
1936–40	0·7	0·9	2	16	48	107	212	411	806	1·063
1941–45	0·7	0·5	2	12	39	86	181	322	644	0·861
1946	0·5	0·4	2	9	39	64	159	275	580	0·749
1947	0·7	0·3	2	13	36	86	144	262	533	0·736
83d, e. Hemiplegia, paralyses and cerebral effusions of unstated origin—FEMALES.										
1931–35	0·9	0·9	4	17	52	98	181	355	777	1·383
1936–40	0·7	0·6	4	17	42	84	173	325	688	1·102
1941–45	0·5	0·6	3	13	40	77	148	288	596	0·893
1946	0·5	0·3	1	8	34	62	121	271	539	0·783
1947	0·5	0·9	1	9	28	63	139	241	532	0·770

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

Table CXI shows the death rates at separate age groups, and the C.M.I. at all ages, for three components of the group during 1931–47. Cerebral embolism, thrombosis and softening cannot be distinguished from one another satisfactorily from death certificates and are dealt with together. The distinction of these conditions from cerebral hæmorrhage is also not always clear cut, and in the absence of any statement of duration of illness this is true also of the group of residual and ill-defined paralyses, but the last mentioned group is small in comparison with the other two and is diminishing.

At ages under 25 the mean annual death rate in 1931–35 was 4·4 for males and 3·2 for females for the whole group; in 1946 the rates were 8·0 and 7·0, and in 1947 they were 11·0 and 7·7. The deaths in triennial periods from

1921–23 to 1945–47 at separate age groups of children under 15 years are shown below for each sex.

Period	Under 4 weeks		1–11 months		1–4 years		5–9 years		10–14 years	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1921–23 ...	1	1	24	7	33	48	27	21	40	34
1924–26 ...	5	2	13	9	18	30	19	22	36	23
1927–29 ...	2	—	8	10	20	19	17	9	19	14
1930–32 ...	—	1	1	4	9	6	7	5	11	6
1933–35 ...	—	—	2	3	7	7	12	7	8	10
1936–38 ...	—	—	4	5	7	3	4	1	10	6
1939–41 ...	8	5	11	8	7	14	8	8	15	7
1942–44 ...	42	36	47	32	18	15	10	12	21	12
1945–47 ...	31	24	35	31	29	13	5	8	18	10

During the period 1930–38 deaths of young children attributed to this cause were uncommon, but a large increase in deaths of infants occurred after 1939, both in the first month of life and at 1–11 months ; and at 1–4 years a similar increase occurred, starting later for boys than for girls. Of the 121 deaths under 1 year in 1945–47, 101 were attributed to cerebral hæmorrhage or effusion, 19 to embolism or thrombosis and 1 to hemiplegia. The increases might be due to changes in death certification rather than to real changes in incidence of cerebral hæmorrhage, particularly for deaths due to cerebral injury at birth and deaths which in the past were attributed simply to " convulsions ". In the 5th Revision of the International List which came into force in 1940 it was recommended that enquiry should be made concerning all deaths attributed to convulsions at ages over six months. The trend of the numbers of deaths finally classified to convulsions, and also to injury at birth, is shown in the table.

Year	No. of deaths assigned to Convulsions								No. of deaths assigned to Injury at Birth			
	Under 1 month		1–5 months		6–11 months		1–4 years		Under 1 month		1–11 months	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1936 ...	291	164	191	107	84	65	73	86	906	593	22	9
1937 ...	216	142	191	103	73	65	72	46	911	553	27	18
1938 ...	247	141	138	103	68	53	55	59	1,010	556	26	15
1939 ...	229	132	148	95	51	51	50	45	1,036	561	30	22
1940 ...	229	116	173	112	55	51	59	58	985	588	32	15
1941 ...	201	107	209	132	60	52	50	46	884	543	29	17
1942 ...	164	84	154	120	64	55	41	35	974	643	27	16
1943 ...	119	64	148	89	53	41	32	38	986	580	22	19
1944 ...	113	56	128	93	46	24	30	29	1,040	678	26	23
1945 ...	96	45	99	91	39	24	28	26	1,132	653	22	15
1946 ...	80	36	94	71	31	23	20	18	1,363	780	34	18
1947 ...	51	39	99	57	37	21	16	24	1,475	904	24	20

Before 1940, progressive decreases were occurring in the numbers of deaths which had to be classified to convulsions in the absence of any more precise diagnosis, but in 1940 and 1941 the fall was interrupted at ages over 1 month. After that it proceeded rapidly at each age, and was more than large enough

to account for the increase in deaths assigned to intra-cranial vascular lesions from 1942 onwards. Injury at birth showed no diminution at ages 1–11 months, and increased at under 1 month. It may be concluded that the apparent increase in cerebral vascular lesion deaths of children was probably due to more precise description of the causes of deaths previously attributed to convulsions.

At ages between 25 and 65 the progression of the civilian rates per million from intra-cranial vascular lesions as a whole was as follows :—

Period	Males					Females				
	25–	35–	45–	55–	60–64	25–	35–	45–	55–	60–64
1931–35	20	100	509	1,476	2,786	20	99	572	1,386	2,547
1936–40	20	93	517	1,500	2,897	19	103	580	1,460	2,670
1941–45	37	106	501	1,398	2,745	24	105	594	1,432	2,555
1946	23	88	478	1,380	2,730	20	105	591	1,429	2,549
1947	23	89	496	1,346	2,756	25	110	552	1,367	2,570

The rates for males between 25 and 45 were enhanced during the war by civilian selection, and they then returned to about the pre-war level. For males between 45 and 65 and females between 55 and 65 rates reached maximal levels in 1936–40 and decreased again in 1941–45. In 1946–47 small decreases occurred between 45 and 60, with no appreciable changes at 60–64.

At ages 65–69 the total rates in 1931–35 for males and females were 5·5 and 4·7 per thousand ; in 1941–45 they averaged 5·0 and 4·6, and in 1947 were almost the same at 5·1 and 4·7. At 70–74 the rates in 1931–35 were 9·6 for males and 8·3 for females ; in 1941–45 they averaged 8·3 and 7·9, and in 1947 they were higher again at 8·9 and 8·5. At ages over 75 the total rates in 1947 were 18·1 and 17·9 per thousand living, compared with 18·1 and 16·7 in 1931–35.

Table CXII.—Intra-cranial Vascular Lesions : Death Rates per million living in each Region and class of Area by sex at ages 45-64 and over 65, 1947.

Area	45–64		65 and over	
	M.	F.	M.	F.
England and Wales	**1,140**	**1,170**	**9,834**	**9,990**
Regional Summary :				
South East	969	978	8,676	9,211
Greater London	935	883	8,122	8,460
Remainder of South East ...	1,014	1,102	9,245	10,010
North	1,339	1,343	11,028	10,563
North I	1,395	1,475	11,767	11,041
North II	1,270	1,444	11,120	11,199
North III	1,217	1,264	10,703	10,660
North IV	1,403	1,326	10,928	10,237
Midland	1,071	1,143	9,885	9,910
Midland I	1,057	1,139	9,771	10,051
Midland II	1,096	1,150	10,091	9,639
East	1,065	1,151	10,176	10,789
South West	1,225	1,212	9,280	10,267
Wales	1,244	1,430	10,469	11,280
Wales I	1,249	1,401	9,968	10,916
Wales II	1,233	1,500	11,539	11,948
Density Summary :				
County Boroughs*	1,249	1,262	10,438	9,999
Other Urban Districts* ...	1,224	1,242	10,470	10,670
Rural Districts*...	1,036	1,202	9,444	10,322

* Excluding Greater London.

Table CXII shows the death rates in 1947 at ages 45–64 and over 65 in each region and density aggregate. Whereas men suffered an excess of mortality in the large towns compared with rural areas amounting to 21 per cent. at 45–64, for women of those ages the excess was only 5 per cent. ; and at ages over 65 whilst men showed an urban excess of 11 per cent. women registered a rural excess. Amongst the regions, there was a large excess in the north and west compared with the midlands, south and east.

89. Diseases of the Ear and Mastoid Antrum.—Deaths from these causes averaged 1,440 annually in 1935–38, and numbered 1,189 and 1,009 in 1939 and 1940. In 1945 there were 909 deaths, falling still further to 809 in 1946 and 798 in 1947.

Table CXIII.—Disease of Ear and Mastoid : Death Rates by Sex and Age. 1931-35 and each year 1936 to 1947.

	Death rates per million living*								C.M.I.* All Ages
	0–	1–	5–	15–	25–	35–	45–	65 and over	
Males									
1931–35	415	71	63	43	34	30	27	21	1·143
1936	685	88	52	44	29	29	28	27	1·231
1937	699	75	53	31	27	29	26	13	1·116
1938	532	76	41	33	26	24	26	23	1·000
1939	641	50	30	26	20	25	23	22	0·909
1940	525	44	22	26	22	21	23	22	0·796
1941	546	35	20	27	22	24	20	15	0·758
1942	493	37	23	30	32	18	22	17	0·801
1943	599	49	27	33	37	28	20	20	0·952
1944	589	40	22	25	33	23	21	18	0·864
1945	586	34	14	30	25	17	20	10	0·755
1946	539	18	13	25	14	14	13	15	0·611
1947	481	24	11	15	12	14	14	13	0·580
Females									
1931–35	295	67	57	25	15	15	17	18	1·228
1936	428	69	46	21	14	17	16	16	1·212
1937	461	57	44	15	15	15	16	16	1·149
1938	417	63	38	15	10	12	12	15	1·000
1939	439	42	27	18	12	12	12	17	0·957
1940	342	43	21	10	9	10	12	14	0·769
1941	377	36	17	11	7	10	11	10	0·699
1942	340	25	22	12	7	8	9	14	0·692
1943	387	26	25	13	13	6	10	10	0·773
1944	446	31	21	12	9	6	10	9	0·768
1945	439	22	14	11	9	5	10	8	0·683
1946	416	16	14	10	5	6	7	8	0·589
1947	299	14	12	7	5	7	7	12	0·543

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

Table CXIII shows that the C.M.I. for males fell from 1·23 in 1936 to 0·76 in 1941 and then increased to 0·95 in 1943, after which interruption the index fell progressively to 0·61 in 1946 and 0·58 in 1947. For females there was a similar decline from 1·23 in 1931–35 to 0·69 in 1942, which was arrested in 1943–44 and then continued to 0·59 in 1946 and 0·54 in 1947. In the first year of life maximal death rates were reached for each sex in 1937 and the rates in 1947 showed falls of 31 and 35 per cent. below the peak levels for males and females respectively. At ages 1–4, for which 1936 was the worst year, death rates in 1947 showed falls of 68 and 75 per cent. for boys and girls respectively compared with ten years previously. At 5–14 mortality was falling before 1936, and the ten-year improvements were 79 and 73 per cent.

93c,d ; 94 ; 162a,c. Degenerative Heart Disease and Senility.—In Table CXIV are given the death rates per million living at different ages in each year 1931 to 1947 from two groups of degenerative heart disease which are closely allied and somewhat confused in their nomenclature. The first group comprises deaths attributed to diseases in the description of which the word coronary is used (94a) and to conditions described as angina pectoris without mention of coronary disease (94b). The numbers of deaths assigned to the coronary sub-group in the five years 1941 to 1945 were 15,547, 16,701, 18,678, 20,819, 23,234, and they increased further to 26,782 in 1946 and 31,514 in 1947. On the other hand those assigned to the angina pectoris sub-group tended to decrease, the numbers being 2,210, 2,020, 1,979, 2,096, 1,992, 1,880, 1,726.

Table CXIV.—Coronary, Arteriosclerotic and Hypertensive Heart Disease, and Myocarditis with arteriosclerosis : Death Rates by Sex and Age in each year 1931 to 1947.

Period	Death rates per million living*									
	0–	25–	35–	45–	50–	55–	60–	65–	70–	75 and over
	94. Diseases of Coronary Arteries and Angina Pectoris—MALES.									
1931	—	8	55	158	347	578	912	1,373	1,814	2,005
1932	0	6	63	224	398	640	950	1,588	1,998	2,257
1933	0	6	67	252	484	775	1,151	1,763	2,386	2,815
1934	0	7	78	264	518	889	1,313	1,964	2,564	3,138
1935	1	12	81	294	611	970	1,448	2,095	2,974	3,663
1936	0	7	92	316	642	1,088	1,682	2,369	3,269	3,968
1937	—	14	102	332	732	1,165	1,769	2,548	3,549	4,434
1938	1	12	104	364	707	1,265	1,948	2,857	3,849	4,635
1939	0	13	124	417	873	1,515	2,250	3,082	4,301	5,196
1940	1	13	121	443	886	1,486	2,283	3,276	4,337	5,489
1941	0	11	127	428	814	1,434	2,128	3,128	3,924	5,095
1942	0	15	125	442	854	1,473	2,131	3,154	4,122	5,287
1943	1	22	149	469	980	1,618	2,430	3,412	4,294	5,392
1944	1	20	161	554	1,027	1,714	2,676	3,814	4,925	5,847
1945	0	19	168	542	1,045	1,838	2,924	4,066	5,256	6,477
1946	1	24	183	608	1,219	2,110	3,237	4,459	5,729	7,326
1947	1	22	216	724	1,384	2,259	3,622	5,191	6,910	8,647

Table CXIV (*contd.*)

Period	Death rates per million living*									
	0–	25–	35–	45–	50–	55–	60–	65–	70–	75 and over
94. Diseases of Coronary Arteries and Angina Pectoris—FEMALES.										
1931	—	3	10	36	55	136	305	505	751	1,022
1932	—	3	13	30	85	163	330	605	846	1,164
1933	—	3	16	49	97	159	430	663	987	1,370
1934	—	1	20	40	109	234	429	814	1,183	1,617
1935	0	4	20	59	122	250	491	894	1,357	1,859
1936	0	3	18	53	148	269	564	963	1,459	2,032
1937	1	7	19	63	141	287	580	1,084	1,664	2,160
1938	1	5	23	76	149	329	700	1,159	1,764	2,531
1939	1	3	28	76	152	362	752	1,341	1,915	2,923
1940	1	3	30	91	179	387	780	1,343	2,162	2,930
1941	0	7	23	67	172	369	694	1,306	1,892	2,781
1942	0	5	27	77	147	406	735	1,338	1,955	2,912
1943	—	4	25	97	194	377	752	1,532	2,088	3,007
1944	0	5	26	89	202	404	851	1,568	2,254	3,222
1945	0	4	23	99	234	447	893	1,680	2,601	3,392
1946	0	3	28	121	226	480	1,038	1,809	2,892	4,100
1947	0	6	34	116	244	546	1,062	2,005	3,252	4,779
93 c.1. Cardiovascular Degeneration—MALES.										
1931	—	0	9	46	113	260	781	1,604	3,485	7,855
1932	—	1	7	50	133	324	762	1,838	3,598	8,511
1933	—	1	10	53	147	326	807	1,876	4,020	9,271
1934	—	2	12	63	148	328	884	1,940	4,168	9,081
1935	—	0	13	59	143	364	922	2,000	4,227	9,683
1936	—	1	16	70	191	429	1,059	2,112	4,589	10,929
1937	—	2	14	64	174	386	1,065	2,177	4,618	11,511
1938	0	0	10	64	190	449	1,104	2,231	4,850	11,974
1939	—	2	13	64	196	420	1,105	2,399	5,094	12,979
1940	0	1	13	64	212	510	1,198	2,657	5,002	13,061
1941	0	3	19	62	175	506	1,105	2,379	4,610	12,019
1942	—	3	12	65	158	423	980	2,364	4,402	11,228
1943	0	1	14	53	152	466	949	2,117	4,204	11,460
1944	0	4	10	53	142	423	1,072	2,211	4,489	11,482
1945	—	3	12	54	158	426	1,029	2,242	4,538	11,788
1946	—	1	10	52	157	453	1,084	2,292	4,668	12,946
1947	0	2	13	54	199	463	1,145	2,556	5,174	14,848
93 c.1. Cardiovascular Degeneration—FEMALES.										
1931	—	1	4	29	75	191	455	931	2,102	5,864
1932	—	0	5	24	73	178	472	1,011	2,303	6,372
1933	0	1	6	25	85	174	486	1,059	2,383	6,876
1934	—	—	5	28	73	205	556	1,181	2,453	6,639
1935	—	1	7	31	103	227	550	1,211	2,783	7,530
1936	0	1	10	34	112	220	598	1,329	3,050	8,342
1937	—	1	13	31	103	230	614	1,447	3,171	8,954
1938	—	2	12	42	132	238	629	1,432	3,231	8,864
1939	—	2	6	35	109	251	699	1,473	3,452	9,877
1940	—	1	9	41	111	279	747	1,687	3,506	10,019
1941	—	2	9	47	113	279	636	1,517	3,229	9,028
1942	—	1	10	41	114	242	602	1,382	3,020	9,022
1943	—	1	9	36	85	225	641	1,344	2,939	9,154
1944	—	1	8	23	101	194	583	1,420	3,095	9,293
1945	—	2	6	38	106	249	610	1,440	3,301	9,757
1946	0	2	10	33	98	252	636	1,535	3,617	10,678
1947	0	0	9	42	104	248	667	1,572	3,912	11,911

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

The second group (93c 1.) comprises hypertensive heart disease, cardio-vascular degeneration and myocardial degeneration (or myocarditis) with mention of arteriosclerosis. Arteriosclerotic heart disease, a term not much used in England, is also included here. Some of these conditions may differ from coronary disease only in description, and the groups are best considered together. This is not a complete solution of the difficulties since the very large group of myocardial degeneration without mention on the death certificate of coronary disease, angina, arteriosclerosis or hypertension (93c 3, shown in Table CXV) may contain conditions which, if more fully described, would have fallen into 93c 1, or 94. The lack of distinction of hypertensive conditions and the inclusion elsewhere of cardio-renal disease make the present classification unsatisfactory ; and in any event accurate diagnosis of degenerative conditions affecting the heart is often difficult and the nomenclature used is continually changing. Since more than half of all deaths now occur at ages 65 and over, and more than a third of these are attributed to heart disease, the problem of diagnosis, description and classification of these conditions is one which merits more attention than is at present being devoted to it.

The C.M.I. for *coronary disease and angina pectoris* increased for males from 0·62 in 1933 to unity in 1938 ; and for females it increased from 0·56 to unity. In 1941 the indices were 1·10 and 1·08 respectively, and by 1945 they had reached 1·44 and 1·38. The upward trend then became still more pronounced, the C.M.I. in 1947 being 1·851 for males and 1·765 for females. The percentage increases in death rates between 1945 and 1947 at different ages over 35 were as follows :—

	35–	45–	50–	55–	60–	65–	70–	75 and over
Males	+29	+34	+32	+23	+24	+28	+31	+34
Females	+48	+17	+ 4	+22	+19	+19	+25	+41

The trend of death rates since 1931 from the causes classified in No. 93c. 1, *cardiovascular degeneration*, is also shown in Table CXIV. In most age groups the highest rates were recorded in 1940, those of 1939 being almost as high at ages over 70. The rates then diminished, but since 1943 they have again risen, and the percentage increases between 1945 and 1947 at various ages are shown below :—

	35–	45–	50–	55–	60–	65–	70–	75 and over
Males	+ 8	0	+26	+ 9	+11	+14	+14	+26
Females	+50	+11	− 2	0	+ 9	+ 9	+19	+22

The relative increases were smaller for the most part than for coronary disease, and it is possible that some transfer from the one group to the other was occurring through changing fashions in nomenclature. In the table below the averages of the total death rates for the *combined causes* in Nos. 93 c. 1 and 94 in three-year periods are expressed as percentages of those in the preceding period, and rates in 1947 are similarly expressed in terms of those for 1943–45.

	35–	45–	50–	55–	60–	65–	70–	75 and over
Males								
1934–36	138	136	139	140	136	124	126	124
1937–39	126	122	127	128	126	123	121	125
1940–42	114	115	108	112	106	111	101	103
1943–45	123	115	113	111	113	105	105	101
1947 ...	134	135	136	126	129	130	131	134
Females								
1934–36	148	127	142	140	129	134	131	124
1937–39	126	132	118	121	125	124	124	126
1940–42	107	113	106	116	106	108	104	104
1943–45	90	105	110	97	103	105	103	103
1947 ...	133	124	113	126	120	119	132	132

It is remarkable that at ages over 70 mortality attributed to cardiovascular degeneration and coronary disease was increasing during the period 1931–39 by about one-quarter every three years, that it then remained almost stationary during the war, and after the war again increased rather more rapidly by about one-third in three years. At ages between 45 and 70 almost the same thing occurred, except that appreciable, though greatly diminished, increases continued during the war. In 1947 the relative increases compared with 1943–45 were very uniform at all age groups for men, amounting to about one-tenth annually ; but they were rather less for women at ages 50–54 and 60–69.

Table CXV.—Myocardial Degeneration and Senility without mention of hypertension or arteriosclerosis : Death Rates by Sex and Age in 1931-33, 1934-36, 1937-39, 1940-42 and 1943-45, 1946 and 1947.

	Death rates per million living*									
	0–	25–	35–	45–	50–	55–	60–	65–	70–	75 and over
	93 c: 2. Fatty degeneration of heart.									
Males										
1931–1933 ...	0	5	20	59	109	156	230	373	474	530
1934–1936 ...	0	3	14	42	77	120	183	251	340	360
1937–1939 ...	1	3	14	35	69	99	153	213	238	255
1940–1942 ...	0	4	10	27	43	68	96	146	160	178
1943–1945 ...	0	3	8	21	33	40	71	91	100	106
1946	0	2	7	13	21	31	46	68	99	104
1947	0	1	5	16	29	35	54	59	79	88
Females										
1931–1933 ...	1	7	23	56	105	170	263	385	442	571
1934–1936 ...	0	5	18	49	82	129	210	305	391	381
1937–1939 ...	0	4	17	46	70	110	173	237	259	291
1940–1942 ...	0	3	13	31	50	80	123	164	226	223
1943–1945 ...	0	2	8	17	28	49	86	101	135	146
1946	0	3	8	23	30	37	59	84	104	121
1947	0	1	6	10	25	47	51	71	95	110

Table CXV (*contd.*)

	Death rates per million living*									
	0–	25–	35–	45–	50–	55–	60–	65–	70–	75 and over
	93c: 3, 93d. Other myocarditis (not acute, hypertensive or arteriosclerotic).									
Males										
1931–1933 ...	4	18	93	271	526	977	1,979	4,103	8,604	21,834
1934–1936 ...	5	21	98	292	601	1,105	2,239	4,463	9,345	24,217
1937–1939 ...	6	23	96	302	652	1,260	2,596	4,881	10,154	27,804
1940–1942 ...	5	35	94	294	656	1,318	2,542	4,835	9,872	28,798
1943–1945 ...	4	33	78	218	486	1,043	2,084	4,122	8,444	24,979
1946	3	21	59	199	432	910	2,043	3,782	7,762	24,655
1947	4	17	59	164	437	954	2,039	3,752	8,297	26,872
Females										
1931–1933 ...	5	24	91	244	433	862	1,798	3,612	7,668	21,890
1934–1936 ...	6	26	94	236	458	878	1,923	3,908	8,137	23,751
1937–1939 ...	7	28	102	262	488	915	1,964	3,949	8,504	26,280
1940–1942 ...	4	28	84	232	428	833	1,758	3,745	8,200	26,675
1943–1945 ...	4	20	59	162	335	669	1,411	3,057	7,040	23,794
1946	3	18	61	143	323	586	1,341	2,845	6,559	24,138
1947	3	18	49	132	285	572	1,282	2,700	6,740	25,194
	162a, c. Senility without mention of psychosis.									
Males										
1931–1933 ...	—	—	—	—	1	5	43	290	2,140	16,526
1934–1936 ...	—	—	—	—	1	4	32	260	1,875	14,519
1937–1939 ...	—	—	—	—	1	2	32	203	1,634	13,616
1940–1942 ...	—	—	—	—	—	—	2	237	1,636	13,340
1943–1945 ...	—	—	—	—	—	0	2	168	1,332	10,982
1946	—	—	—	—	—	—	1	112	976	9,903
1947	—	—	—	—	—	—	—	98	872	9,471
Females										
1931–1933 ...	—	—	—	—	1	7	49	255	1,997	16,874
1934–1936 ...	—	—	—	—	1	4	37	235	1,707	14,484
1937–1939 ...	—	—	—	—	1	6	24	178	1,445	13,216
1940–1942 ...	—	—	—	—	—	1	1	194	1,424	13,034
1943–1945 ...	—	—	—	—	—	—	3	150	1,132	10,912
1946	—	—	—	—	—	—	—	128	923	10,210
1947	—	—	—	—	—	—	—	85	830	9,679

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

Table CXV shows the trend of death rates attributed to *fatty degeneration* of the heart, *other myocarditis* not described as acute, hypertensive or arteriosclerotic, and *senility* without mention of psychosis. Those rates continued to fall in 1946, but increased at some ages in 1947, though not for senility.

Combining these with the rates for coronary disease and cardiovascular degeneration the *total rates* per 100,000 were as follows :—

	35–	45–	50–	55–	60–	65–	70–	75 and over
Males								
1937–39	23	77	168	309	586	1,040	2,078	5,859
1940–42	24	82	173	333	592	1,087	2,047	5,971
1943–45	26	81	169	325	585	1,034	1,911	5,355
1946 ...	26	87	183	350	641	1,071	1,923	5,493
1947 ...	29	96	205	371	686	1,167	2,133	5,993
Females								
1937–39	15	42	82	160	349	701	1,527	5,156
1940–42	13	38	76	157	328	696	1,511	5,216
1943–45	10	31	67	135	294	630	1,373	4,746
1946 ...	11	32	68	136	307	640	1,410	4,925
1947 ...	10	30	66	141	306	643	1,483	5,167

Amongst males under 70 there were no important changes in the total death rates between 1937–39 and 1943–45, but considerable and progressive increases then occurred at each age group in 1946 and 1947. Males over 70 registered decreases in 1943–45, followed by substantial increases, bringing the rates in 1947 well above those of 1937–39. Amongst females under 70, however, the total death rates decreased considerably during the war at each age group, and then showed no important changes in 1946 or 1947. Females over 70 registered decreases in 1943–45 similar to those of males, followed by increases in 1946 and 1947 which brought the rates back to pre-war levels.

The contrast between the behaviour of the total death rates from coronary, cardiovascular, chronic myocardial disease and senility in men and women under 70 years of age, is shown more clearly in the next table.

	35–	45–	50–	55–	60–	65–	70–	75 and over
	Percentage increases or decreases in death rates compared with three years previously.							
Males								
1937–39	+10	+12	+17	+19	+20	+14	+10	+11
1940–42	+ 4	+ 6	+ 3	+ 8	+ 1	+ 5	− 2	+ 2
1943–45	+ 8	− 1	− 2	− 2	− 1	− 5	− 7	−10
1947 ...	+12	+19	+21	+14	+17	+13	+12	+12
Females								
1937–39	+ 7	+14	+ 8	+ 8	+ 8	+ 7	+ 7	+ 8
1940–42	−13	−10	− 7	− 2	− 6	− 1	− 1	+ 1
1943–45	−23	−18	−12	−14	−10	− 9	− 9	− 9
1947 ...	0	− 3	− 1	+ 4	+ 4	+ 2	+ 8	+ 9
	Percentage changes from 1937–39 to 1947.							
Males ...	+26	+25	+22	+20	+17	+12	+ 3	+ 2
Females ...	−33	−29	−20	−12	−12	− 8	− 3	0
	Ratio of male to female death rate.							
1937–39	1·53	1·83	2·05	1·93	1·68	1·48	1·36	1·14
1943–45	2·60	2·61	2·52	2·41	1·99	1·64	1·39	1·13
1947 ...	2·90	3·20	3·11	2·63	2·24	1·81	1·44	1·16

Comparing 1947 with 1937–39, male mortality showed a relative increase exceeding one-fifth at ages under 55 and diminishing as age advanced, whereas female mortality showed a decrease of one-third at 35–44 which diminished with advancing age and disappeared at about 75. Consequently the excess of male over female mortality had become much greater in 1947 than in 1937–39, this increase in the sex ratio falling off regularly with advancing age and disappearing at ages over 75. Changes in diagnosis and death certification clearly could not account for these remarkable contrasts, and it must be concluded that the recent war had cumulative effects on the circulatory systems of men without any such effects appearing in the case of women.

In the next table are shown the mean annual death rates in 1937–39 and rates in 1947 from all causes other than the heart conditions dealt with above, in order to see whether similar contrasts appear between the effects of the war on the two sexes.

	35–	45–	50–	55–	60–	65–	70–	75 and over
	Death rates per 100,000 living, other causes.							
Males								
1937–39	440	748	1,133	1,612	2,380	3,426	5,143	9,105
1947 ...	314	607	926	1,415	2,173	3,045	4,521	8,062
Females								
1937–39	352	546	777	1,078	1,655	2,495	3,818	7,238
1947 ...	264	434	626	885	1,316	2,000	3,191	6,276
	Percentage changes from 1937-39 to 1947.							
Males ...	—29	—19	—18	—12	— 9	—11	—12	—11
Females ...	—25	—21	—19	—18	—20	—20	—16	—13
	Ratio of male to female death rate.							
1937–39	1·25	1·37	1·46	1·50	1·44	1·37	1·35	1·26
1947 ...	1·19	1·40	1·48	1·60	1·65	1·52	1·42	1·28

The picture is quite different. At ages up to 55 mortality fell in almost the same degree for men as for women, leaving the sex ratio actually lower than before at 35–44 and only slightly higher at 45–54. Between 55 and 70 improvement of male death rates lagged behind that of female rates and the sex ratio increased in consequence, but to a much smaller extent than for the heart conditions. At ages over 70 mortality fell by about 11 per cent. for men and about 14 per cent. for women, raising the sex ratio slightly. Certain other causes of death show similar unfavourable effects of the war upon the health of men in comparison with women at ages between 55 and 70, but it is evident that the great difference between the sexes in the trend of degenerative heart disease death rates at all ages under 70 was not merely part of an effect on mortality in general, and would seem to have been due to factors specially affecting the circulatory system.

107-109. Pneumonia.—Deaths from all forms of primary pneumonia totalled 20,215 in 1946 and 22,695 in 1947, compared with 27,467 in 1938, 23,403 in 1939, and 19,984 in 1945. The C.M.I. for males had diminished from unity in 1938 to 0·641 by 1945, with an interruption in 1943, and in 1946 it fell further to 0·602, but increased to 0·656 in 1947. For females it increased from 0·694 in 1945 to 0·705 in 1946 and 0·754 in 1947.

Table CXVI.—Lobar and Other Pneumonia : Death Rates by Sex and Age in each year 1931 to 1947.

Year	Death rates per million living*										C.M.I. All ages*
	0–	1–	5–	15–	25–	35–	45–	55–	65–	75 and over	
	108. Lobar pneumonia—Males										
1931	880	275	62	124	170	356	525	705	948	1,229	1·113
1932	890	244	68	124	171	320	482	641	919	1,253	1·055
1933	904	272	65	116	167	341	498	652	799	1,146	1·043
1934	911	280	62	130	179	364	587	721	945	1,264	1·155
1935	912	215	55	103	160	332	533	737	827	1,126	1·056
1936	873	227	53	102	157	310	527	727	868	1,012	1·038
1937	938	245	54	91	159	316	540	759	803	1,075	1·047
1938	832	199	49	108	149	300	515	693	824	1,102	1·000
1939	657	131	26	47	71	148	325	514	678	1,067	0·685
1940	795	131	27	63	86	143	314	560	732	958	0·706
1941	1,014	154	27	58	74	145	297	545	717	1,014	0·703
1942	712	98	19	52	64	135	226	477	647	804	0·592
1943	784	77	19	46	61	129	255	480	656	1,057	0·621
1944	773	62	14	34	68	106	191	405	610	859	0·534
1945	746	51	11	33	54	79	163	349	539	821	0·465
1946	631	55	5	20	28	58	137	354	547	868	0·423
1947	546	60	6	20	24	56	140	349	528	938	0·419
	108. Lobar pneumonia—Females										
1931	717	242	66	76	101	173	206	338	567	965	1·312
1932	671	217	54	68	94	146	194	331	577	1,006	1·245
1933	539	239	52	61	87	160	186	320	514	921	1·184
1934	588	205	56	56	91	145	180	314	584	890	1·178
1935	542	193	48	58	84	141	174	289	534	783	1·096
1936	641	194	45	57	87	122	182	308	510	841	1·108
1937	631	200	41	46	77	133	181	288	513	875	1·093
1938	658	200	38	49	74	125	162	258	456	717	1·000
1939	538	103	27	39	50	70	116	215	372	698	0·748
1940	750	120	23	27	48	69	114	208	413	741	0·787
1941	754	113	18	31	41	68	103	214	412	710	0·764
1942	597	96	17	29	38	56	90	166	305	570	0·620
1943	682	94	18	42	47	59	106	173	375	660	0·719
1944	470	53	15	23	26	46	79	133	281	556	0·533
1945	600	59	9	19	27	37	68	123	274	542	0·511
1946	557	48	10	16	25	37	62	130	274	568	0·503
1947	525	40	9	15	21	27	63	131	267	622	0·501
	107, 109. Broncho– and unspecified pneumonia—Males										
1931	12,794	2,119	113	73	100	229	433	696	1,640	3,777	1·426
1932	10,635	1,530	97	61	87	192	357	569	1,447	3,631	1·179
1933	10,183	1,638	110	58	97	237	431	671	1,394	3,724	1·229
1934	8,972	1,431	92	57	76	205	390	672	1,391	3,224	1·110
1935	9,050	1,089	65	54	81	172	352	600	1,397	3,211	1·038
1936	9,726	1,218	65	55	72	155	390	705	1,435	3,319	1·143
1937	10,378	1,233	61	43	62	161	410	776	1,494	3,622	1·205
1938	8,643	1,059	70	58	78	173	371	665	1,306	3,202	1·000
1939	7,650	631	46	39	54	123	312	626	1,244	3,393	0·885
1940	10,879	1,103	55	61	92	171	422	896	1,573	4,032	1·184
1941	11,361	908	53	67	85	132	314	727	1,252	3,277	1·022
1942	8,238	522	41	55	75	120	231	547	1,095	2,824	0·800
1943	9,051	551	42	61	72	130	292	622	1,311	3,456	0·935
1944	7,507	410	41	37	83	110	234	509	1,057	2,625	0·762
1945	7,904	386	36	43	67	79	206	527	1,012	2,654	0·748
1946	7,386	304	30	33	39	70	205	511	1,070	2,875	0·712
1947	7,293	325	28	35	33	71	210	537	1,222	3,643	0·799

Table CXVI (*contd.*)

Year	Death rates per million living*										C.M.I. All ages*
	0–	1–	5–	15–	25–	35–	45–	55–	65–	75 and over	
	107, 109. Broncho- and unspecified pneumonia—Females										
1931	9,413	1,815	111	48	86	154	244	494	1,374	3,452	1·530
1932	7,874	1,460	95	51	75	127	202	470	1,208	3,216	1·322
1933	7,556	1,467	98	42	75	153	248	480	1,217	3,358	1·349
1934	7,047	1,272	79	47	63	108	211	415	1,133	2,837	1·182
1935	7,151	997	66	38	63	105	184	401	1,037	2,661	1·099
1936	7,335	1,004	65	32	58	92	191	368	1,079	2,925	1·142
1937	7,154	1,109	57	32	59	123	225	445	1,098	3,116	1·213
1938	6,543	865	64	47	52	97	170	355	890	2,575	1·000
1939	5,869	581	46	35	55	87	148	368	962	3,012	0·965
1940	8,067	918	52	38	61	97	203	448	1,199	3,581	1·234
1941	9,060	817	56	40	55	81	153	341	982	3,251	1·119
1942	6,160	501	36	34	46	74	123	270	744	2,330	0·822
1943	6,890	529	40	36	58	90	144	339	899	3,166	1·013
1944	6,042	395	32	27	41	57	97	224	686	2,184	0·766
1945	6,493	351	28	26	37	57	92	233	711	2,208	0·774
1946	6,097	281	24	21	36	53	108	261	723	2,636	0·792
1947	5,642	286	25	22	24	50	108	268	789	3,176	0·862

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

Table CXVI shows the death rates by sex and age, and the C.M.I. at all ages, for lobar and other or unspecified forms of pneumonia in each year 1931 to 1947. In 1946–47 the unspecified group took eight per cent. of the total deaths compared with nine per cent. in 1938. For lobar pneumonia alone the C.M.I. continued to fall in 1946 and 1947 for each sex, showing an improvement of 60 per cent. for males and 54 per cent. for females between 1937 and 1947. The relative fall in mortality was greater at some ages than others, the percentage decreases from 1937 to 1947 for each pneumonia group being as follows :—

		0–	1–	5–	15–	25–	35–	45–	55–	65–	75 and over
Lobar ...	M.	−42	−76	−89	−78	−85	−82	−74	−54	−34	−13
	F.	−17	−80	−78	−67	−73	−80	−65	−55	−48	−29
Other ...	M.	−30	−74	−54	−19	−47	−56	−49	−31	−18	+ 1
	F.	−21	−74	−56	−31	−59	−59	−52	−40	−28	+ 2

Amongst children under five mortality fell to much the same extent for broncho-pneumonia as for lobar, whereas at all other ages the lobar form showed greater improvement. The effects of sulphonamides and penicillin during ten years have been to reduce death rates from lobar pneumonia by about four-fifths amongst children aged 1-14 and young adults under 45, and then in diminishing degree as age advanced. Rates for broncho- and other forms of pneumonia have been halved for children aged 5–14 and for adults between 25 and 55, not affected at ages over 75 and reduced by one-fifth to two-fifths at other adult ages.

Table CXVII.—Pneumonia : Death Rates per million living in each Region and class of Area by Sex in three age groups. 1947.

Area	15–44		45–64		65 and over	
	Males	Females	Males	Females	Males	Females
England and Wales	**82**	**54**	**577**	**272**	**2,526**	**1,926**
Regional Summary :						
South East	73	48	580	282	3,187	2,449
Greater London	74	52	669	320	3,927	2,872
Remainder of S.E.	70	44	463	233	2,429	1,999
North	101	62	626	263	2,151	1,528
North I	105	54	643	215	1,820	1,400
North II	123	89	728	296	2,247	1,356
North III	108	53	496	242	1,982	1,562
North IV	90	64	676	283	2,347	1,583
Midland	78	52	590	277	2,432	1,801
Midland I	73	51	634	306	2,534	1,870
Midland II	87	52	507	224	2,246	1,668
East	69	43	376	277	1,908	1,454
South West	68	56	422	267	2,170	1,864
Wales	72	61	555	251	1,913	1,471
Wales I	80	67	613	249	1,924	1,514
Wales II	51	46	402	255	1,889	1,392
Density Summary :						
County Boroughs*	99	58	719	296	2,616	1,862
Other Urban Districts* ...	79	53	498	246	2,101	1,598
Rural Districts*	67	51	392	225	1,939	1,652

* Excluding Greater London.

Table CXVII gives the death rates in 1947 from all forms of pneumonia at three adult age periods in each region and density aggregate. The excess of mortality in county boroughs compared with rural districts was much greater for men than for women at each age period, the respective percentage ratios being 148 and 114 at 15–44, 183 and 132 at 45–64, 135 and 113 at ages over 65.

There was a remarkable reversal of the regional distribution as age advanced. At 15–44 North II had much the highest rates and the North generally experienced high mortality, whilst Greater London showed no important excess over the rest of the south and east of England. At 45–64 Greater London rates were much above those in other parts of the South, and even exceeded those of the North as a whole. At 65 and over Northern rates were below the national average whilst Greater London registered very large excess for each sex over any other region. Expressing Greater London rates in terms of the county boroughs figure taken as a hundred, the change with age is indicated by the following ratios at successive age groups :—males 75, 93, 150 ; females 90, 108, 154. This is the more surprising since the aggregate of other large towns did not show as great excess over rural areas at ages 65 and over as at the younger ages.

114a. Silicosis.—Table CXVIII continues the record of deaths of males attributed to silicosis and other occupational pneumoconioses, with and without tuberculosis, and of the death rates of males from this cause at three age groups. It is apparent that the death rate at ages over 65 increased further in each year 1946 and 1947, and at 45–64 it increased in 1947.

Table CXVIII.–Silicosis and other Occupational Pneumoconioses; with and without Tuberculosis: Mortality of Males by Ages in each year 1939 to 1947.

Year	Numbers of deaths*								Rate per million living		
	Silicosis, etc., without mention of tuberculosis (114a)				Silicosis with respiratory tuberculosis (13a)				Silicosis with and without tuberculosis (13a), (114a)		
	0–	25–	45–	65 and over	0–	25–	45–	65 and over	25–	45–	65 and over
1939†	—	29	178	48	—	22	84	26	8	61	46
1940	—	37	225	63	—	28	96	23	12	74	53
1941	—	18	179	57	1	29	101	20	10	65	47
1942	—	23	181	50	—	29	92	23	11	63	43
1943	—	31	211	71	—	32	91	30	15	69	57
1944	—	35	230	67	1	31	84	32	17	72	55
1945	—	33	241	108	—	25	112	29	14	80	74
1946	—	36	239	116	2	39	114	39	13	79	82
1947	—	26	265	145	—	37	154	43	10	91	99

* Excluding non-civilian males from 3rd September, 1939.
† According to 1940 classification.

115. Diseases of the Buccal Cavity.—Deaths from diseases of the mouth, pharynx and tonsils (in No. 115 of the International List, comprising mostly septic conditions and excluding specific infections and cancer) numbered 526 in 1946 and 483 in 1947, compared with 1,487 in 1938, 932 in 1942 and 666 in 1945. Table CXIX shows how the death rates at separate age groups have fallen progressively from the levels of 1934–36.

Table CXIX.—Appendicitis and Diseases of the Mouth and Throat: Death Rates by Sex and Age. 1931-33, 1934-36, 1937-39, 1940-42, 1943-45, 1946 and 1947.

	121. Appendicitis						115. Diseases of Buccal cavity, pharynx and tonsils			
	Mean annual death rate per million living*					C.M.I. all ages*	Mean annual death rate per million living*			
	0–	15–	25–	45–	65 and over		0–	25–	45–	65 and over
Males										
1931–33 ...	80	79	64	138	188	1·091	43	31	60	110
1934–36 ...	81	70	68	121	203	1·070	47	35	65	118
1937–39 ...	74	73	60	113	175	0·972	36	23	40	85
1940–42 ...	62	71	47	76	128	0·739	31	19	24	66
1943–45 ...	53	56	39	64	124	0·628	24	15	17	46
1946	46	40	23	53	111	0·495	16	7	15	39
1947	39	38	24	52	106	0·470	13	6	12	35
Females										
1931–33 ...	59	42	40	99	131	1·150	40	29	64	113
1934–36 ...	52	41	39	93	135	1·089	42	30	70	123
1937–39 ...	50	39	34	77	132	0·987	31	20	30	68
1940–42 ...	37	33	25	46	87	0·677	25	13	20	57
1943–45 ...	34	27	23	47	84	0·639	18	11	13	40
1946	27	16	17	38	71	0·499	13	3	8	29
1947	28	14	13	32	78	0·468	10	4	7	32

* Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931-39 conform with the method of classification from 1940 onwards.

121. Appendicitis.—Deaths from appendicitis also continued to decrease, numbering 1,570 in 1946 and 1,514 in 1947, compared with 3,027 in 1938, 2,038 in 1942 and 1,774 in 1945. Table CXIX shows that in 1946 and 1947 the death rates continued to fall for each age group, the C.M.I's. indicating a decrease of 53 per cent. for each sex between 1938 and 1947.

117, 118(1). Ulcer of the Stomach and Duodenum, and Gastritis.—Deaths attributed to *gastric ulcer* numbered 3,029 in 1946 and 3,000 in 1947, compared with annual averages of 3,120 in years 1943-45 and 3,187 in 1935-38. The C.M.I. declined for males from 0·953 in 1945 to 0·806 in 1947, but for females it increased from 0·775 to 0·877.

Table CXX.—Ulcer of the Stomach and Duodenum and Gastritis : Death Rates by Sex and Age. 1931-33, 1934-36, 1937-39, 1940-42, 1943-45, 1946 and 1947.

	Mean annual death rates per million living.*									C.M.I. all ages*
	0–	5–	15–	25–	35–	45–	55–	65–	75 and over	
	117a. Ulcer of the stomach.									
Males										
1931–33 ...	1	1	12	47	124	256	297	317	297	0·933
1934–36 ...	0	1	9	45	114	268	344	357	377	0·997
1937–39 ...	0	0	9	40	120	259	369	389	433	1·030
1940–42 ...	1	1	8	41	117	248	433	432	431	1·091
1943–45 ...	1	0	10	40	98	213	382	408	377	0·969
1946	—	—	6	24	76	185	346	420	394	0·869
1947	1	—	5	14	64	169	297	416	500	0·806
Females										
1931–33 ...	1	1	5	10	31	77	115	154	188	1·173
1934–36 ...	1	0	3	9	25	68	112	168	191	1·137
1937–39 ...	1	0	2	8	19	54	106	159	224	1·030
1940–42 ...	0	0	3	8	20	47	100	165	238	1·025
1943–45 ...	0	0	2	7	13	35	77	138	195	0·811
1946	1	0	2	6	12	33	78	140	202	0·808
1947	1	0	2	3	11	35	77	146	283	0.877
	117b. Ulcer of the duodenum.									
Males										
1931–33 ...	1	0	9	33	73	136	161	179	187	0·978
1934–36 ...	0	0	7	31	64	137	180	180	182	0·981
1937–39 ...	0	0	8	22	66	131	198	211	216	1·008
1940–42 ...	2	0	8	33	80	149	243	255	250	1·204
1943–45 ...	1	0	11	40	86	147	222	253	248	1·189
1946	—	—	7	22	64	137	220	288	271	1·123
1947	3	—	6	22	63	138	228	263	295	1·121
Females										
1931–33 ...	0	0	1	5	7	16	24	34	54	0·989
1934–36 ...	1	—	1	3	9	19	27	40	48	1·083
1937–39 ...	0	—	1	1	9	13	27	48	52	1·027
1940–42 ...	0	—	2	3	7	15	26	43	54	1·024
1943–45 ...	0	0	2	3	8	16	26	41	58	1·030
1946	—	—	—	1	6	12	18	40	67	0·852
1947	—	—	1	2	5	10	18	51	75	0·946

Table CXX.—(*contd.*)

	Mean annual death rates per million living.*									C.M.I. all ages*
	0–	5–	15–	25–	35–	45–	55–	65–	75 and over	
	118 : 1. Inflammation of the Stomach.									
Males										
1931–33 ...	103	4	2	3	5	14	34	90	288	1·693
1934–36 ...	72	2	1	2	3	12	24	62	194	1·176
1937–39 ...	55	1	1	1	4	11	20	51	160	0·956
1940–42 ...	58	2	0	1	4	6	16	34	116	0·791
1943–45 ...	39	1	0	2	2	6	12	26	73	0·556
1946	25	1	1	1	1	6	14	16	62	0·435
1947	28	—	1	1	1	4	5	15	42	0·338
Females										
1931–33 ...	89	4	1	2	5	9	29	105	372	1·880
1934–36 ...	64	2	0	1	3	8	22	71	269	1·344
1937–39 ...	40	1	1	1	2	6	14	52	185	0·917
1940–42 ...	39	1	1	1	3	4	10	36	138	0·733
1943–45 ...	29	1	0	1	0	3	5	29	102	0·520
1946	19	—	0	1	1	2	5	22	92	0·419
1947	22	—	1	1	0	0	9	14	63	0·349

* Excluding non-civilian males from the 3rd September, 1939, and non-civilian females from the 1st June, 1941.

Rates for 1931–1939 conform with the method of classification in use from 1940 onwards.

Table CXX shows that male death rates continued to fall in 1946 and 1947 at each age group between 15 and 65, but not at ages over 65 ; and female rates decreased between 25 and 45 but increased at advanced ages.

Deaths attributed to *duodenal ulcer* numbered 1,831 in 1946 and 1,890 in 1947, compared with averages of 1,853 in 1943–45 and 1,519 in 1935–38. The C.M.I. declined for males from 1·189 in 1943–45 to 1·121 in 1947 ; and for females it was 0·852 in 1946 and 0·946 in 1947, compared with 1·030 in 1943–45. Male death rates fell considerably at ages between 15 and 45 but changed little between 45 and 75 ; and female rates were lower at ages between 15 and 65.

Deaths attributed to *gastritis* or its synonyms numbered 322 in 1946 and 265 in 1947, compared with averages of 379 in 1943–45 and 693 in 1935–38. There has been a continuous fall in these numbers, probably because of more precise death certification and consequent transfer of many of such deaths to the ulcer groups. The combined death rates per million from the three causes are shown below :—

Period	Males						Females					
	25–	35–	45–	55–	65–	75 and over	25–	35–	45–	55–	65–	75 and over
1931–33 ...	83	202	406	492	586	772	17	43	102	168	293	614
1934–36 ...	78	181	417	548	599	753	13	37	95	161	279	508
1937–39 ...	63	190	401	587	651	809	10	30	73	147	259	461
1940–42 ...	75	201	403	692	721	797	12	30	66	136	244	430
1943–45 ...	82	186	366	616	687	698	11	21	54	108	208	355
1946 ...	47	141	328	580	724	727	8	19	47	101	202	361
1947 ...	37	128	311	530	694	837	6	16	45	104	211	421

Between 1931 and 1939 the total rates for females were falling at every age, whereas for males they were falling at 25–34, changing little at 35–54 and rising at ages over 55. The war had no important effect on the downward trend of female rates, and it continued in 1946 for each age group under 75, and in 1947 for each age group under 55, but at ages over 55 the rates increased in 1947. Amongst men the death rates declined both in 1946 and 1947 for each age group between 25 and 65, but not at later ages.

Table CXXI.—Ulcer of Stomach and Duodenum : Death Rates per million living in each Region and class of Area by Sex at ages 45-64, and over 65, 1947.

Area	Ulcer of stomach				Ulcer of duodenum			
	45–64		65 and over		45–64		65 and over	
	Males	Females	Males	Females	Males	Females	Males	Females
England and Wales	**222**	**54**	**434**	**188**	**175**	**14**	**268**	**58**
Regional summary :								
South East	253	50	574	218	171	12	331	81
Greater London	262	45	642	257	187	14	387	80
Remainder of South East	243	56	504	178	149	10	274	83
North	191	59	300	147	197	16	268	43
North I	200	41	225	141	159	15	215	44
North II	250	74	374	149	228	37	342	50
North III	190	50	294	142	198	9	307	43
North IV	175	68	315	150	204	15	248	41
Midland	243	61	423	219	186	13	277	52
Midland I	263	58	443	209	184	16	286	41
Midland II	206	67	386	236	188	6	260	72
East	190	77	418	184	133	9	95	31
South West	175	20	429	216	111	23	186	57
Wales	222	38	366	89	146	10	138	34
Wales I	201	32	418	126	124	14	155	32
Wales II	277	53	255	19	201	—	102	39
Density Summary :								
County Boroughs*	247	62	423	209	202	13	289	49
Other Urban Districts	210	49	400	158	164	14	220	61
Rural Districts*	163	57	333	141	140	14	220	48

* Excluding Greater London.

Table CXXI shows the regional death rates in 1947 at two age groups for ulcer of the stomach and duodenum separately. The county boroughs registered considerable excess over rural districts for men of each age, both for gastric and duodenal ulcers ; but for women no consistent effect of urbanisation was apparent except for gastric ulcer at ages over 65. Greater London gave high rates at advanced ages for each type and sex, Midland rates exceeded those of the North for gastric ulcer, and amongst the northern divisions North II registered the highest rates for almost every group. The ratio of duodenal to gastric ulcer amongst males aged 45–64 was greater in North III and IV than in other regions.

119, 120. Enteritis and Diarrhœa.—The numbers of deaths from these causes at ages under one year, and from one year upwards, in the ten years 1938 to 1947 were as follows :—

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Under 1 year ...	3,143	2,660	2,655	2,757	3,252	3,354	3,517	3,592	3,341	4,606
1 year and over ...	1,825	1,685	1,778	1,897	1,674	1,573	1,501	1,745	1,598	1,254

Deaths of infants increased in 1947, but this was mainly due to more being exposed to risk, the infant mortality rate of 5·15 per thousand related births being about the same as in 1942 and 1945 (see page 30). At other ages the number of deaths decreased greatly in 1947 to a total much below any registered in the nine years preceding.

Table CXXII shows the trend of death rates since 1931 at various ages for each sex.

Table CXXII.—Enteritis and Diarrhœa : Death Rates by Sex and Age. 1931-33, 1934-36, 1937-39, 1940-42, 1943-45, 1946 and 1947.

	Mean Annual death rates per million living*									C.M.I. all ages*
	0–	5–	15–	25–	35–	45–	55–	65–	75 and over	
Males										
1931–33 ...	1,679	15	8	14	17	34	53	122	385	1·117
1934–36 ...	1,472	10	10	15	19	33	54	105	362	0·998
1937–39 ...	1,401	10	11	18	20	31	63	106	306	0·962
1940–42 ...	1,311	10	11	22	22	27	62	111	298	0·919
1943–45 ...	1,422	7	9	20	20	28	46	93	270	0·945
1946 ...	1,256	4	9	11	18	27	45	102	326	0·856
1947 ...	1,588	4	6	9	17	19	29	55	209	0·972
Females										
1931–33 ...	1,204	18	14	24	26	37	59	129	409	1·158
1934–36 ...	1,066	14	16	26	32	36	54	112	347	1·048
1937–39 ...	985	10	14	27	29	32	55	100	320	0·971
1940–42 ...	932	10	16	25	27	33	52	99	288	0·928
1943–45 ...	1,040	7	15	23	25	31	41	93	310	0·972
1946 ...	892	4	13	19	23	32	46	101	293	0·871
1947 ...	1,149	3	10	16	20	22	38	62	220	0·953

*Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification in use from 1940 onwards.

130-132. Nephritis.—Deaths attributed to all forms of nephritis totalled 12,718 in 1946 and 12,691 in 1947, compared with 17,046 in 1937, 13,377 in 1942 and 12,558 in 1945. The C.M.I. continued to fall, for males from 0·764 in 1945 to 0·739 in 1946 and 0·717 in 1947, and for females from 0·716 to 0·713 and 0·701. This indicates a reduction of 29 per cent. since 1938.

Table CXXIII.—Nephritis : Death Rates by Sex and Age. 1931-47.

	Death Rates per million living*								C.M.I. All Ages*
	0–	15–	25–	35–	45–	55–	65–	75 and over	
	130. Acute nephritis.								
Males									
1931–33	24·0	23·9	18·9	20·2	41·8	43·7	75·0	95·8	1·177
1934–36	24·5	23·4	21·3	21·5	33·9	43·4	65·9	86·6	1·140
1937–39	19·8	19·7	18·0	21·3	30·3	35·4	54·3	65·5	0·964
1940–42	19·7	20·3	23·7	19·1	26·7	39·2	49·5	61·2	0·968
1943–45	18·3	23·3	21·0	19·0	24·2	31·5	32·6	55·1	0·856
1946 ...	16·5	12·3	15·0	11·8	22·0	30·6	31·9	54·1	0·696
1947 ...	16·1	12·4	11·8	10·7	16·3	28·0	39·7	38·5	0·643
Females									
1931–33	24·1	22·0	15·0	23·4	34·9	51·5	61·4	70·5	1·316
1934–36	21·6	19·6	17·7	22·0	29·1	43·6	62·5	66·2	1·218
1937–39	17·6	14·4	13·8	19·2	27·0	37·8	47·0	63·9	1·015
1940–42	16·6	12·2	13·0	14·8	20·0	28·7	44·7	45·2	0·845
1943–45	15·7	13·5	12·5	10·9	17·2	21·6	30·3	30·4	0·703
1946 ...	10·0	11·3	9·1	12·9	12·6	20·6	23·3	28·5	0·571
1947 ...	10·5	9·5	6·6	9·1	14·1	13·5	33·0	31·3	0·535
	131b. Arteriosclerotic kidney								
Males									
1940 ...	1·8	10·6	19·8	49·6	156·4	435·7	1,066·1	2,826·4	
1941 ...	1·2	8·4	23·6	48·8	145·2	401·8	1,001·6	2,437·4	
1942 ...	1·4	10·0	33·5	52·4	144·7	386·3	883·9	2,178·3	
1943 ...	1·1	9·5	34·8	46·3	147·2	349·6	759·5	2,180·1	
1944 ...	1·1	11·4	43·8	47·8	132·2	308·6	760·1	2,032·3	
1945 ...	0·7	8·7	33·7	43·9	138·6	334·5	742·9	1,950·0	
1946 ...	1·3	12·3	19·8	38·8	138·3	320·8	797·6	2,244·4	
1947 ...	1·1	8·7	18·1	40·5	123·3	332·3	803·5	2,415·8	
Females									
1940 ...	1·6	2·1	14·1	51·2	124·5	343·9	810·7	1,815·2	
1941 ...	0·9	9·1	17·6	41·4	116·1	294·0	696·7	1,584·9	
1942 ...	1·2	5·9	16·6	41·9	121·1	245·6	619·8	1,445·1	
1943 ...	0·9	6·4	19·8	49·2	110·9	240·1	591·2	1,348·3	
1944 ...	2·3	5·6	19·2	41·9	99·2	222·3	584·6	1,365·0	
1945 ...	1·4	9·2	20·9	40·4	95·9	211·6	573·2	1,385·9	
1946 ...	1·9	6·9	17·9	38·2	100·1	213·4	591·6	1,429·3	
1947 ...	1·1	8·5	14·2	43·4	103·6	231·2	563·0	1,589·8	
	131a, c, 132. Other chronic and unspecified nephritis								
Males									
1940 ...	8·4	47·6	69·8	96·2	178·2	363·7	728·3	1,660·1	
1941 ...	6·5	66·7	97·2	98·8	179·4	340·1	708·5	1,508·3	
1942 ...	6·7	58·7	85·6	84·9	165·4	294·3	645·5	1,523·7	
1943 ...	6·6	77·7	106·1	80·9	134·9	292·3	573·3	1,370·8	
1944 ...	7·7	60·5	104·7	96·8	123·3	287·0	566·8	1,258·1	
1945 ...	7·4	62·5	99·0	75·5	135·7	260·8	572·9	1,205·8	
1946 ...	6·7	42·1	66·2	65·6	126·7	253·5	478·9	1,231·3	
1947 ...	6·9	36·8	51·2	61·1	115·5	220·4	473·1	1,157·5	
Females									
1940 ...	7·9	36·9	54·6	100·6	160·4	305·7	604·0	1,022·4	
1941 ...	9·5	36·0	63·5	80·1	144·8	277·0	534·5	856·3	
1942 ...	8·8	27·2	55·0	71·9	133·1	235·5	501·0	912·4	
1943 ...	6·6	33·1	54·3	76·9	124·5	228·1	476·4	869·4	
1944 ...	9·4	33·8	57·4	73·4	111·6	221·9	464·5	818·8	
1945 ...	7·4	29·3	41·5	60·1	103·8	241·7	407·3	746·4	
1946 ...	10·2	30·4	45·4	62·3	103·2	201·1	409·0	787·2	
1947 ...	8·3	31·5	42·9	60·4	95·5	176·8	340·7	775·2	

*Excluding non-civilian males from 3rd September, 1939, and non-civilian females from 1st June, 1941. Rates for 1931–39 conform with the method of classification from 1940 onwards.

Table CXXIII gives the death rates from *acute nephritis* (No. 130) at separate age periods since 1931. Between 1931–33 and 1943–45 the rates were falling continually at ages over 45 and also for children and young women aged 15–24 and 35–44. In 1946 and 1947 further substantial improvements occurred at ages under 55, particularly amongst young men whose war-time rates were prejudiced by civilian selection. The group entitled *arteriosclerotic kidney* (No. 131b), which includes chronic interstitial nephritis, cirrhotic kidney and nephrosclerosis, with or without mention of hypertension, and cardiorenal disease, registered decreases at ages 25–34 and increases at advanced ages, but no important changes at other ages. For *other chronic and unspecified nephritis* death rates fell in 1946 and 1947 for men between 15 and 75 and for women between 45 and 75.

Table CXXIV.—Nephritis : Death Rates per million living in each Region and class of Area by Sex at ages 45-64, and over 65. 1947.

Area	45–64		65 and over	
	Males	Females	Males	Females
England and Wales	**393**	**305**	**1,947**	**1,393**
Regional Summary :				
South East	338	227	1,796	1,219
Greater London	336	200	1,440	1,062
Remainder of S.E.	340	262	2,161	1,386
North	450	369	1,965	1,437
North I	472	377	1,779	1,638
North II	399	432	2,540	1,605
North III	436	376	1,861	1,158
North IV	461	350	1,962	1,495
Midland	369	312	1,783	1,384
Midland I	359	311	1,809	1,400
Midland II	387	315	1,735	1,353
East	319	286	1,832	1,278
South West	430	369	2,818	1,841
Wales	492	365	2,336	1,914
Wales I	517	375	2,080	1,641
Wales II	428	340	2,885	2,417
Density Summary :				
County Boroughs*	423	362	1,888	1,496
Other Urban Districts*	413	309	2,087	1,424
Rural Districts*	369	320	2,214	1,511

* Excluding Greater London.

Table CXXIV shows the regional distribution in 1947 of death rates at ages 45–64 and over 65 from all forms of nephritis. There was pronounced urban excess at 45–64 ; but rural areas had higher mortality than towns at ages over 65. Wales and the North had high rates in all groups, and the South West also showed excess at 65 and over.

137. Diseases of the Prostate.—The number of deaths attributed to hypertrophy of the prostate, which averaged about 5,300 in years 1940 to 1944 and

fell to 5,196 in 1945, decreased further to 5,148 in 1946 and 4,976 in 1947. Other diseases of the prostate (excluding cancer) contributed 157 and 158 deaths in the two years. The C.M.I. declined from 0·94 in 1945 to 0·86 in 1947. Table CXXV continues the record of death rates in each year 1931 to 1947 at different ages, and shows that the improvements occurred at all ages under 75.

Table CXXV.—Diseases of the Prostate : Death Rates according to Age in each year 1931 to 1947.

Year	Death rates per million males living*								C.M.I. All Ages*
	25–	45–	50–	55–	60–	65–	70–	75 and over	
1931 ...	1·2	11	54	184	476	1,245	2,394	5,521	1·028
1932 ...	1·6	10	47	169	476	1,312	2,493	5,912	1·075
1933 ...	1·7	13	49	168	520	1,332	2,604	5,812	1·090
1934 ...	1·5	10	45	175	555	1,224	2,689	5,641	1·075
1935 ...	1·8	13	53	162	519	1,206	2,577	6,062	1·090
1936 ...	2·2	7	49	182	512	1,192	2,450	5,917	1·064
1937 ...	2·1	10	42	173	499	1,126	2,575	5,706	1·044
1938 ...	1·5	11	35	152	435	1,134	2,305	5,704	1·000
1939 ...	1·8	6	30	180	483	1,132	2,399	5,867	1·037
1940 ...	1·4	13	46	157	526	1,265	2,571	6,418	1·127
1941 ...	1·8	7	45	150	504	1,255	2,612	6,097	1·098
1942 ...	0·7	8	54	165	456	1,220	2,282	5,962	1·044
1943 ...	1·7	7	37	156	459	1,188	2,478	5,718	1·035
1944 ...	2·3	9	42	148	447	1,159	2,366	5,353	0·986
1945 ...	0·5	6	37	128	440	1,096	2,213	5,196	0·940
1946 ...	0·5	5	38	133	421	956	2,075	5,196	0·906
1947 ...	0·3	5	25	91	358	863	1,976	5,214	0·862

* Excluding non-civilians from 3rd September, 1939. Rates for 1931 to 1939 conform with the method of classification from 1940 onwards.

140-150. Maternal Mortality.—The number of deaths from causes attributed to pregnancy and childbearing, including abortion, decreased from 2,431 in 1936 to 1,640 in 1940, and in the next two years the numbers were 1,678 and 1,673. The downward trend was then resumed, the totals in 1943 to 1947 being successively 1,618, 1,490, 1,262, 1,205, 1,058, despite the larger numbers of births. This great improvement must have been due to a combination of factors, the introduction of sulphonamides on a large scale about 1937, and of penicillin about 1945 being specially important.

Table CXXVI.—Deaths, including those of non-civilians, attributed to and associated with all Maternal causes, excluding Abortion : in each year 1938 to 1947.

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Total deaths classed to Nos. 142–150 :—										
Single	74	85	70	*78	85	85	61	70	59	43
Married	1,654	1,548	1,298	1,257	1,262	1,193	1,101	943	979	868
Widowed...	14	10	4	18	13	18	13	15	10	7
All Women	**1,742**	**1,643**	**1,372**	**1,353**	**1,360**	**1,296**	**1,175**	**1,028**	**1,048**	**918**
Ages 15–	45	58	46	*39	41	27	24	22	20	21
20–	227	226	213	200	211	185	191	157	128	158
25–	472	469	350	340	334	305	228	204	235	184
30–	468	422	355	334	352	349	333	252	298	259
35–	341	316	263	285	273	274	268	255	241	195
40–	164	136	122	140	122	123	112	119	100	89
45 and over ...	25	16	23	15	27	33	19	19	26	12
Total deaths not classed to 142–150, but associated with a condition therein :—										
Single	21	22	18	18	18	23	24	29	16	12
Married	424	403	344	336	341	409	350	307	333	249
Widowed	4	4	6	4	4	5	9	6	4	2
All Women	**449**	**429**	**368**	**358**	**363**	**437**	**383**	**342**	**353**	**263**
Ages 15–	9	13	14	15	10	11	6	2	4	5
20–	63	55	46	61	65	62	66	54	45	39
25–	95	115	89	81	101	101	80	71	76	69
30–	118	106	93	94	83	123	99	90	100	64
35–	111	101	86	57	70	92	89	85	73	57
40–	46	37	35	47	32	41	39	34	51	27
45 and over ...	7	2	5	3	2	7	4	6	4	2
No. of live and still births† ...	645,933	638,799	612,899	599,967	673,886	705,596	772,784	699,270	843,634	902,821

* Including 1 death at 10–14 years.
† Registered live and still births up to 1938 inclusive and numbers of occurrences thereafter.

Table CXXVI shows the numbers of deaths attributed to pregnancy and childbearing, excluding abortion, and also the numbers resulting from other associated conditions, according to marital condition and age, in each year from 1938 to 1947. The number of deaths caused by pregnancy and childbearing decreased from 1,742 in 1938 to 1,028 in 1945, rose slightly to 1,048 in 1946 with the large increase in births, and then declined to a new low level of 918 notwithstanding a further increase in numbers of women exposed to risk. The increase in 1946 was limited to married women, deaths of single and of widowed being fewer than in 1945, and the age periods affected were 25–34 and 45 upwards. In 1947 the deaths at all ages of single, married and widowed women all decreased, but at ages under 25 there were increases.

In the same period the number of deaths from other causes associated with pregnancy and childbearing (excluding abortion) declined from 449 in 1938 to 368 in 1940, and then showed no consistent change until 1947, when it fell to 263, the age groups registering most improvement being 20–24 and 30–39.

Table CXXVII.—Deaths, including those of non-civilians, attributed to or associated with Abortion : 1928-47.

Year	Spontaneous, therapeutic or unstated		Induced non-therapeutic (criminal)		Total attributed to abortion (including criminal)	Others associated with abortion	Total attributed to or associated with abortion
	With sepsis	Without sepsis	With sepsis	Without sepsis			
1928	224	147	57		428	83	511
1929	238	140	67		445	182*	627
1930	300	147	67		514	77	591
1931	229	140	52	27	448	77	525
1932	262	139	46	23	470	90	560
1933	257	144	56	29	486	97	583
1934	295	118	67	33	513	64	577
1935	262	108	64	30	464	74	538
1936	242	105	49	24	420	70	490
1937	176	109	56	28	369	104	473
1938	173	101	54	26	354	81	435
1939	167	79	80	28	354	49	403
1940	116	76	43	33	268	56	324
1941	145	90	66	24	325	47	372
1942	175	62	64	12	313	49	362
1943	167	64	76	15	322	57	379
1944	170	63	75	7	315	52	367
1945	110	50	65	9	234	19	253
1946	69	42	41	5	157	37	194
1947	53	48	36	3	140	44	184

* The excessive number of deaths associated with abortion but not classed to it in 1929 was due partly to the influenza epidemic of that year and partly to the allocation to abortion rather than to childbirth, for that year only, of 63 deaths said to be associated with premature delivery without definition as to length of gestation.

Table CXXVII shows the deaths due to and associated with abortion in each year 1928 to 1947. This total was around 600 in 1929–30 and had fallen to 403 in 1939. After 1944 a rapid decrease occurred, bringing the number to 184 in 1947. Of the deaths directly attributed to abortion the percentage with mention of sepsis and the percentage said to have been induced for non-therapeutic reasons changed as follows :—

	1931–33	1934–36	1937–39	1940–42	1943–45	1946	1947
Sepsis mentioned ...	64	70	66	67	76	70	64
Induced (non-therapeutic)	17	19	25	27	28	29	28

The proportion of all abortion deaths with mention of sepsis was two-thirds in 1946–47, as in 1937–39. About 28 per cent. of all abortion deaths are known to have been induced for non-therapeutic reasons, sepsis being mentioned for nine-tenths of them.

Table CXXVIII.—Mortality rates of Women, including non-civilians, in or associated with Pregnancy and Childbearing, with distinction of Abortion, 1928-1947.

Year	Per 1,000 live and still births*							Per million women aged 15–44	
	Pregnancy and childbearing without abortion			Associated causes without abortion	Abortion (including induced for toxæmia and non-therapeutic reasons)			Associated with abortion	Abortion total	Associated with abortion
	Sepsis	Other	Total		Sepsis	Other	Total			
1928	1·58	2.17	3·75	0·95	?	?	0·62	0·12	44	9
1929	1·51	2·13	3·64	1·06	?	?	0·66	0·18†	46	12†
1930	1·54	2·06	3·60	0·94	?	?	0·76	0·11	52	8
1931	1·41	2·02	3·43	1·17	0·43	0·25	0·68	0·12	46	8
1932	1·33	2·12	3·46	0·89	0·48	0·25	0·73	0·14	48	9
1933	1·49	2·23	3·72	1·10	0·52	0·29	0·80	0·16	50	10
1934	1·59	2·21	3·80	1·00	0·58	0·24	0·82	0·10	53	7
1935	1·34	2·06	3·41	0·92	0·52	0·22	0·74	0·12	47	8
1936	1·18	2·01	3·19	0·86	0·46	0·20	0·67	0·11	42	7
1937	0·79	2·01	2·79	0·92	0·37	0·22	0·58	0·16	37	10
1938	0·70	1·99	2·70	0·70	0·35	0·20	0·55	0·13	35	8
1939	0·63	1·94	2·57	0·67	0·39	0·17	0·55	0·08	35	5
1940	0·55	1·69	2·24	0·60	0·26	0·18	0·44	0·09	27	6
1941	0·48	1·78	2·26	0·60	0·35	0·19	0·54	0·08	32	5
1942	0·42	1·60	2·02	0·54	0·35	0·11	0·46	0·07	31	6
1943	0·39	1·45	1·84	0·62	0·34	0·11	0·46	0·08	32	6
1944	0·28	1·24	1·52	0·50	0·32	0·09	0·41	0·07	32	5
1945	0·24	1·23	1·47	0·49	0·25	0·08	0·33	0·03	24	2
1946	0·18	1·06	1·24	0·42	0·13	0·06	0·19	0·04	16	4
1947	0·16	0·86	1·02	0·29	0·10	0·06	0·16	0·05	14	5

* Based on registered live and still births up to 1938 inclusive and numbers of occurrences thereafter, and conforming with classification in use from 1940.
† Corrected in accordance with the note below Table CXXVII.

Table CXXVIII gives the death rates per thousand live and still births in each year 1928 to 1947 attributed to and associated with pregnancy, childbirth and the puerperal state, with distinction of abortion and sepsis. The puerperal sepsis rate includes deaths attributed to embolism and sudden deaths in the puerperium, not all of which are due to infection, and since the decline in mortality from these causes has not kept pace with that from puerperal sepsis so specified it is of interest to study them separately. In the table which follows the trends of mortality since 1930 are compared with those of females from several groups of diseases which are mainly due to streptococcal infection, namely :—

A. Erysipelas, scarlet fever, septicæmia, pyæmia cellulitis and acute abscess.

B. Appendicitis, peritonitis and cholecystitis without calculus.

C. Ear and mastoid disease.

D. Acute and subacute bacterial endocarditis.

The increase in streptococcal virulence in 1933–34 was reflected in the rates for puerperal infection and for each of the groups of non-puerperal streptococcal conditions, but decreases occurred in those years in the rate for puerperal embolism. The total non-septic conditions of pregnancy and childbirth registered a small increase.

Death rates of females in terms of the mean annual rate in 1928-30 taken as 100.

Year	Puerperal infection & thrombo-phlebitis 147a, b, c	Puerperal embolism & sudden death 147d	Other pregnancy & childbirth (exc. abortion) 142–6, 148–150	Diseases mainly streptococcal			
				A 8, 11, 24a, b, 152	B 121, 127a, 129	C 89	D 91a, b
1928–30	100	100	100	100	100	100	100
1931	92	88	95	97	102	94	96
1932	84	96	100	92	105	98	100
1933	100	80	105	109	114	108	109
1934	109	72	104	128	116	118	105
1935	89	80	97	94	110	98	114
1936	79	64	95	88	107	98	105
1937	51	52	95	60	102	91	100
1938	44	56	94	57	102	81	109
1939	38	56	92	44	92	77	100
1940	32	60	80	44	80	61	87
1941	28	48	84	39	68	57	92
1942	26	36	75	31	67	57	100
1943	22	44	68	34	67	64	96
1944	16	32	58	34	66	64	87
1945	14	24	58	28	58	57	61
1946	9	28	50	19	54	51	52
1947	8	24	41	16	49	47	48

After 1934 the puerperal infection death rate declined year by year without interruption to only 26 per cent. of the level in 1928–30 by 1942, and to eight per cent. by 1947. For the superficial septic conditions and scarlet fever, comprising group A, the rate declined similarly to 31 per cent. of the 1928–30 figure by 1942, but no further improvement occurred until 1945, when the rate again began to decline, reaching 16 per cent. of the base level by 1947. A similar halt in the fall of mortality in the period 1942–44 occurred for groups B and C, and this suggests that a temporary increase in virulence of streptococcal infections may have occurred in 1943–44 similar to that of ten years earlier. If so its effect on deaths from puerperal infection must have been counteracted by improving preventive and therapeutic measures. From about 1945 penicillin was becoming available in sufficient quantities to affect death rates appreciably.

Mortality from infections of the appendix and gall bladder (group B) began to fall in 1939, four years later than for puerperal and superficial sepsis, and after a stationary period in 1941–44, declined to 49 per cent. of the 1928–30 level by 1947. For ear and mastoid disease (group C) the fall started in 1937 reaching 57 per cent. of the base level by 1941 but the rate increased somewhat in 1943–44 and then declined again to 47 per cent. in 1947. The rate for bacterial endocarditis showed no consistent change until the introduction of penicillin, which resulted in a fall to 61 per cent. of the 1928–30 level in 1945 and to 48 per cent. in 1947. The combined effects of sulphonamide and penicillin therapy on these three groups of deep infections were therefore to reduce mortality by one-half in each instance by 1947. For superficial sepsis the effect was greater, mortality being reduced to about a quarter or a fifth of its former value.

Puerperal embolism as a cause of death declined throughout the 20 years, three-year averages of the figures in the table from 1928–30 to 1943–45 being 100, 88, 72, 55, 48, 33. In 1945 it was down to a quarter of its original level, but did not improve any further in 1946 or 1947 after the introduction of penicillin. Although this group forms an international subdivision of No. 147, infection during childbirth and the puerperium, on the assumption that the bulk of such deaths are infective in origin, it may well be that a substantial proportion of those now occurring are not so caused.

The death rate due to all other conditions of pregnancy, childbirth and the puerperium except abortion, that is to say the non-infective conditions, showed no considerable change (apart from a temporary increase in 1932–34) until after 1939, when it began to fall, reaching 58 per cent. of the 1928–30 level in 1944–45, and 41 per cent. in 1947. It seems highly probable that the main factor responsible for this improvement has been better antenatal care, including attention to nutrition.

Sulphonamides first began to affect death rates appreciably in 1937 and had they not been introduced the indices for that year would probably have been about 65 for puerperal infection and 75 for superficial sepsis (group A). In the next ten years to 1947, on that basis, the maximum improvement in the superficial sepsis rate which can be attributed to sulphonamides and penicillin is a fall of 59 in the index ; and for groups B, C and D it was 53, 44 and 52 respectively. It would seem, therefore, that out of a total fall of 92 in the index for puerperal infection since 1928–30 about three-fifths has probably been due to sulphonamides and penicillin. The remainder of the fall must be attributed to improved antiseptic precautions such as the wearing of masks and examination of the throats of attendants, combined with better antenatal care.

The death rate attributed to abortion, which averaged 32 per million women of childbearing age during 1941–44 and fell to 24 in 1945, declined still further to 14 by 1947. When expressed as a ratio to the number of live and still births, which is an approximate guide to the total pregnancies occurring, the post-abortive sepsis rate declined from an average level of 0·50 in 1931–36 to 0·34 in 1937–43, this being attributable to sulphonamides ; and after introduction of penicillin it declined further to 0·10 in 1947. The rate for abortion without mention of sepsis also decreased to almost the same extent.

Table CXXIX.—Deaths of Women, including non-civilians, certified as due to Pregnancy and Childbearing. 1946 and 1947.

Cause of death	1946											1947										
	All ages	Civil Condition			Age (l.b.d.)							All ages	Civil Condition			Age (l.b.d.)						
		S.	M.	W.	15–	20–	25–	30–	35–	40–	45 and over		S.	M.	W.	15–	20–	25–	30–	35–	40–	45 and over
140–141 Abortion (all forms)	**157**	**39**	**113**	**5**	**3**	**20**	**38**	**47**	**37**	**10**	**2**	**140**	**16**	**113**	**11**	**2**	**30**	**33**	**32**	**27**	**15**	**1**
140 Post-abortive infection	110	31	76	3	2	15	32	30	25	5	1	89	11	69	9	1	18	22	21	17	9	1
(*a*) Spontaneous or therapeutic	69	12	55	2	—	6	18	23	18	3	1	53	3	47	3	—	10	15	9	11	7	1
(*aa*) With pyelitis	1	—	1	—	—	—	—	1	—	—	—	1	—	1	—	—	—	1	—	—	—	—
(*ab*) Without pyelitis	68	12	54	2	—	6	18	22	18	3	1	52	3	46	3	—	10	14	9	11	7	1
(*b*) Induced*	41	19	21	1	2	9	14	7	7	2	—	36	8	22	6	1	8	7	12	6	2	—
(*ba*) By woman herself	16	6	10	—	2	5	5	3	1	—	—	16	3	10	3	—	2	4	6	3	1	—
(*bb*) By other persons	12	4	8	—	—	1	4	3	4	—	—	9	1	6	2	—	4	2	2	—	1	—
(*bc*) By persons unstated	13	9	3	1	—	3	5	1	2	2	—	11	4	6	1	1	2	1	4	3	—	—
141 Abortion without sepsis	47	8	37	2	1	5	6	17	12	5	1	51	5	44	2	1	12	11	11	10	6	—
(*a*) Spontaneous or therapeutic	42	5	35	2	1	3	6	16	11	4	1	48	4	42	2	1	10	10	11	10	6	—
With toxæmia	16	2	14	—	—	2	5	5	2	2	—	26	1	24	1	—	7	6	7	3	3	—
Without toxæmia	26	3	21	2	1	1	1	11	9	2	1	22	3	18	1	1	3	4	4	7	3	—
(*b*) Induced*	5	3	2	—	—	2	—	1	1	1	—	3	1	2	—	—	2	1	—	—	—	—
(*ba*) By woman herself	1	—	1	—	—	—	—	—	—	1	—	2	1	1	—	—	2	—	—	—	—	—
(*bb*) By other persons	4	3	1	—	—	2	—	1	1	—	—	1	—	1	—	—	—	1	—	—	—	—
(*bc*) By persons unstated	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
142–150 Maternal causes excluding abortion	**1,048**	**59**	**979**	**10**	**20**	**128**	**235**	**298**	**241**	**100**	**26**	**918**	**43**	**868**	**7**	**21**	**158**	**184**	**259**	**195**	**89**	**12**
142 Ectopic gestation	57	3	54	—	—	3	14	22	14	3	1	40	4	36	—	2	3	8	9	12	5	1
143 Hæmorrhage of pregnancy	25	—	25	—	—	1	5	5	11	2	1	15	1	14	—	—	3	3	2	5	2	—
(*a*) Placenta prævia	15	—	15	—	—	1	3	3	6	1	1	5	—	5	—	—	1	1	—	3	—	—
(*b*) Premature separation of placenta	7	—	7	—	—	—	1	2	3	1	—	4	1	3	—	—	1	2	1	—	—	—
(*c*) Other hæmorrhage of pregnancy	3	—	3	—	—	—	1	—	2	—	—	6	—	6	—	—	1	—	1	2	2	—
144 Toxæmias of pregnancy	97	5	91	1	1	16	18	29	21	12	—	81	7	73	1	2	14	17	22	19	6	1
(*a*) Eclampsia	56	3	52	1	1	12	10	15	12	6	—	48	6	41	1	1	13	14	9	8	3	—
(*b*) Albuminuria, etc.	16	—	16	—	—	—	2	4	6	4	—	14	—	14	—	—	—	2	7	5	—	—
(*c*) Acute yellow atrophy	13	2	11	—	—	1	4	6	1	1	—	7	—	7	—	—	—	1	3	2	1	—
(*d*) Other toxæmias of pregnancy	12	—	12	—	—	3	2	4	2	1	—	12	1	11	—	1	1	—	3	4	2	1
145 Other diseases and accidents of pregnancy	16	1	15	—	—	2	2	5	3	3	1	24	3	21	—	1	6	4	8	2	3	—

146	Hæmorrhage of childbirth and puerperium	194	6	187	1	3	21	44	52	56	16	2	164	8	155	1	5	31	39	44	31	14	—
	(*a*) Placenta prævia	48	1	46	1	1	1	14	13	12	6	1	27	1	26	—	—	3	5	7	7	5	—
	(*b*) Premature separation of placenta ...	12	—	12	—	—	2	4	3	1	2	—	14	—	14	—	—	2	1	5	4	2	—
	(*c*) Other hæmorrhage of childbirth ...	17	—	17	—	—	—	4	6	3	4	—	6	—	5	1	—	1	1	2	2	—	—
	(*d*) Other hæmorrhages after childbirth...	117	5	112	—	2	18	22	30	40	4	1	117	7	110	—	5	25	32	30	18	7	—
147	Infection during childbirth and puerperium	154	8	145	1	2	23	41	44	30	12	2	144	3	141	—	2	21	23	47	33	18	—
	(*a*) General or local with pyelitis ...	2	—	2	—	—	—	1	—	—	—	1	1	—	1	—	—	—	—	1	—	—	—
	(*b*) General or local without pyelitis ...	50	4	46	—	—	8	17	13	8	3	1	33	—	33	—	—	6	7	9	8	3	—
	(*c*) Puerperal thrombophlebitis	47	2	45	—	—	5	11	13	13	5	—	54	1	53	—	—	5	10	18	13	8	—
	(*d*) Puerperal embolism and sudden death	55	2	52	1	2	10	12	18	9	4	—	56	2	54	—	2	10	6	19	12	7	—
148	Puerperal toxæmias	262	23	234	5	9	40	63	72	49	21	8	231	9	222	—	8	40	49	63	49	18	4
	(*a*) Puerperal eclampsia	114	17	97	—	5	24	21	40	18	5	1	104	5	99	—	6	26	27	19	23	2	1
	(*b*) Puerperal albuminuria, etc.	83	3	76	4	2	9	21	18	18	8	7	73	4	69	—	2	6	14	22	18	8	3
	(*c*) Acute yellow atrophy	41	3	37	1	1	7	12	9	7	5	—	38	—	38	—	—	8	6	15	3	6	—
	(*d*) Other puerperal toxæmias	24	—	24	—	1	—	9	5	6	3	—	16	—	16	—	—	—	2	7	5	2	—
149	Other accidents of childbirth	233	13	218	2	5	22	46	67	53	30	10	206	8	194	4	1	36	38	61	43	22	5
150	Other conditions of childbirth and the puerperal state	10	—	10	—	—	—	2	2	4	1	1	13	—	12	1	—	4	3	3	1	1	1
	(*a*) Mastitis during puerperium and lactation	3	—	3	—	—	—	—	1	2	—	—	3	—	3	—	—	1	—	2	—	—	—
	(*b*) Puerperal psychoses	1	—	1	—	—	—	—	—	1	—	—	2	—	2	—	—	—	1	1	—	—	—
	(*c*) Other conditions in 150	6	—	6	—	—	—	2	1	1	1	1	8	—	7	1	—	3	2	—	1	1	1
Total (including abortion)		**1,205**	**98**	**1,092**	**15**	**23**	**148**	**273**	**345**	**278**	**110**	**28**	**1,058**	**59**	**981**	**18**	**23**	**188**	**217**	**291**	**222**	**104**	**13**
	Single	98	98	—	—	9	24	31	19	10	5	—	59	59	—	—	10	20	13	11	4	1	—
	Married	1,092	—	1,092	—	14	124	238	320	267	103	26	981	—	981	—	13	168	201	276	209	103	11
	Widowed	15	—	—	15	—	—	4	6	1	2	2	18	—	—	18	—	—	3	4	9	—	2
Total from abortion (140–141)		**157**	**39**	**113**	**5**	**3**	**20**	**38**	**47**	**37**	**10**	**2**	**140**	**16**	**113**	**11**	**2**	**30**	**33**	**32**	**27**	**15**	**1**
	Single	39	39	—	—	3	6	18	8	3	1	—	16	16	—	—	2	8	2	3	1	—	—
	Married	113	—	113	—	—	14	18	37	34	8	2	113	—	113	—	—	22	29	25	21	15	1
	Widowed	5	—	—	5	—	—	2	2	—	1	—	11	—	—	11	—	—	2	4	5	—	—
Total from causes other than abortion (142–150)		**1,048**	**59**	**979**	**10**	**20**	**128**	**235**	**298**	**241**	**100**	**26**	**918**	**43**	**868**	**7**	**21**	**158**	**184**	**250**	**195**	**89**	**12**
	Single	59	59	—	—	6	18	13	11	7	4	—	43	43	—	—	8	12	11	8	3	1	—
	Married	979	—	979	—	14	110	220	283	233	95	24	868	—	868	—	13	146	172	251	188	88	10
	Widowed	10	—	—	10	—	—	2	4	1	1	2	7	—	—	7	—	—	1	—	4	—	2

* For reasons other than therapeutic. Abortions induced because of toxæmia or hæmorrhage are included in (*a*), and if induced for other therapeutic reasons they are classified in accordance with the statement on the certificate. If not stated to be induced they are assumed to have been spontaneous

Table CXXIX analyses the deaths in 1946 and 1947 according to civil condition and age for each cause distinguished by the International List. In the table which follows the deaths from complications of childbirth and the puerperium (Nos. 146–150) have been related to the numbers of maternities at each age group as shown by Table AA of Part II of the Review for 1946 and 1947. The small number of mothers of unstated age have been distributed proportionately and the resulting numbers of maternities in the two years were :—

Under 20 ...	53,411	30–	402,756	45 and over ...	4,660
20–	427,504	35–	234,730		
25–	534,640	40–	66,564	All ages ...	1,724,265

Deaths per 100,000 maternities in 1946-47.

	Under 20	20–	25–	30–	35–	40–	45 & over	All ages
Hæmorrhage (146)	**15**	**12**	**16**	**24**	**37**	**45**	**43**	**21**
a. Placenta prævia	2	1	4	5	8	17	21	4
b. Premature separation ...	—	1	1	2	2	6	—	2
c, d. Other hæmorrhage ...	13	10	11	17	27	23	21	15
Infection (147)	**7**	**10**	**12**	**23**	**27**	**45**	**43**	**17**
a, b. General and local ...	—	3	5	6	7	9	43	5
c. Thrombophlebitis	—	2	4	8	11	20	—	6
d. Embolism, sudden death...	7	5	3	9	9	17	—	6
Toxæmia (148)	**32**	**19**	**21**	**34**	**42**	**59**	**258**	**29**
a. Eclampsia	21	12	9	15	17	11	43	13
b. Albuminuria, etc. ...	7	4	7	10	15	24	215	9
c. Acute yellow atrophy ...	2	4	3	6	4	17	—	5
d. Other toxæmia	2	—	2	3	5	8	—	2
Other accidents of childbirth (149)	**11**	**14**	**16**	**32**	**41**	**78**	**322**	**25**
Other puerperal conditions (150)	—	**1**	**1**	**1**	**2**	**3**	**43**	**1**
Total complications of childbirth and the puerperium (146–150)	66	56	65	113	149	230	708	93
Per cent. of rate at all ages ...	71	60	70	122	160	247	761	100

The total risk of dying from a complication of childbirth or the puerperium in 1946–47 was least at ages 20–24 and increased after that with advancing age until at 40–44 it was four times as great and after 45 it was 12½ times as great. At ages under 35 the risk was only eight in 10,000.

Expressing the rates in this table for 1946–47 in terms of the mean annual rates for 1940–45 (given on page 236 of the Text for that period) taken as a hundred, the extent of the recent improvement in mortality by cause and age can be seen.

	Under 20	20–	25–	30–	35–	40–	45 & over	All ages
146. Hæmorrhage	115	67	67	71	74	67	52	70
147. Infection	19	42	35	51	53	51	34	44
148. Toxæmia	89	63	72	83	75	74	133	74
149, 150. Other	48	60	43	61	56	70	89	54
146–150. Total complications	61	58	51	65	63	66	87	60

Table CXXXa.—Deaths of Women, including non-civilians, not classed to Pregnancy or Childbearing but certified as associated therewith. 1946.

	Causes of death	All ages	15–	20–	25–	30–	35–	40–	45 and over
10	Diphtheria	2	—	—	—	1	—	1	—
13	Tuberculosis of the respiratory system	33	—	11	6	9	6	1	—
14–22	Other forms of tuberculosis	8	1	4	—	2	1	—	—
24a	Sepsis of upper lip	1	—	—	1	—	—	—	—
24b	Staphylococcal pyæmia, source not known	1	1	—	—	—	—	—	—
30d	Other forms of syphilis	2	—	1	1	—	—	—	—
33	Influenza	11	—	2	2	—	5	2	—
36 : 1	Acute poliomyelitis	1	—	—	1	—	—	—	—
37b	Sequelæ of encephalitis lethargica	1	—	—	—	—	—	1	—
45–55	Cancer	13	1	—	4	5	1	2	—
56	Non-malignant tumours	17	—	—	2	6	4	5	—
57	Tumours of undetermined nature	2	—	—	2	—	—	—	—
58b	Acute rheumatic endocarditis	1	—	1	—	—	—	—	—
59b	Arthritis of hip	1	—	—	—	—	1	—	—
61	Diabetes mellitus	9	—	3	2	1	2	1	—
62 : 3	Hæmorrhage of pituitary body	1	—	—	—	—	—	1	—
63a	Simple goitre	2	—	—	—	—	1	1	—
63b	Exophthalmic goitre	1	—	—	—	1	—	—	—
72a	Primary purpura	2	—	1	1	—	—	—	—
73a	Pernicious anæmia	1	—	—	1	—	—	—	—
73b	Macrocytic anæmia	1	—	—	1	—	—	—	—
73c	Hypochromic anæmias	3	—	—	1	—	1	1	—
73d	Other anæmias	5	—	2	—	2	1	—	—
74a	Leukæmia	2	—	—	2	—	—	—	—
74b	Aleukæmia	1	—	—	—	1	—	—	—
75b	Banti's disease	1	—	1	—	—	—	—	—
75c	Splenomegaly	1	—	—	—	—	1	—	—
76b	Erythrocytosis	1	—	—	—	1	—	—	—
81	Meningitis (non-meningococcal)	2	—	—	—	2	—	—	—
83a	Cerebral hæmorrhage	9	—	1	—	1	5	2	—
83b, c	Cerebral embolism, thrombosis, softening	3	—	—	—	1	—	2	—
85	Epilepsy	4	—	—	1	1	1	1	—
87a	Chorea	2	—	—	2	—	—	—	—
87d	Disseminated sclerosis	1	—	—	—	—	1	—	—
89b	Diseases of the mastoid antrum	1	—	—	1	—	—	—	—
91a, b	Acute or subacute bacterial endocarditis	6	—	—	2	1	2	1	—
92b : 1	Mitral valve disease	59	—	7	19	21	6	5	1
92b : 2	Rheumatic endocarditis	5	1	—	1	2	—	1	—
92c	Unspecified valvular lesions or endocarditis	7	—	3	1	1	2	—	—
93a	Acute myocarditis	1	—	—	—	1	—	—	—
93b	Chronic myocarditis specified as rheumatic	1	—	—	1	—	—	—	—
93c : 1	Cardiovascular degeneration	3	—	—	—	1	1	—	1
93c : 2	Fatty heart	7	—	—	3	—	2	2	—
93c : 3	Other myocardial degeneration	7	—	—	1	3	1	2	—
93d	Myocarditis, not distinguished as acute or chronic	3	—	—	—	—	1	2	—
94	Diseases of the coronary arteries	3	—	—	—	1	1	1	—
95	Other diseases of the heart	2	—	—	—	1	1	—	—
99	Other diseases of the arteries	1	—	—	1	—	—	—	—
100a	Varices	5	—	—	1	1	1	2	—
100b	Other diseases of the veins	4	—	—	—	2	1	1	—
101	Lymphangitis	1	—	—	—	1	—	—	—
102	High blood pressure (idiopathic)	4	—	—	—	1	1	2	—
104	Frontal sinusitis	1	—	—	—	—	1	—	—
106	Bronchitis	9	—	2	2	2	3	—	—
107	Broncho-pneumonia	9	—	2	3	1	2	—	1
108	Lobar pneumonia	12	1	1	4	2	2	2	—
109	Pneumonia (unspecified)	2	—	—	—	1	—	1	—
110a	Empyema	1	—	1	—	—	—	—	—
110b	Pleural effusion	1	—	1	—	—	—	—	—
111a	Hæmorrhagic infraction of lung	2	—	—	1	—	—	1	—
111b	Acute œdema of lung	1	—	—	—	1	—	—	—
112	Asthma	6	—	1	1	4	—	—	—
115a	Dental sepsis	1	—	1	—	—	—	—	—
115b : 2	Streptococcal tonsillitis	1	—	1	—	—	—	—	—
116	Diseases of the œsophagus	1	—	—	—	1	—	—	—
117a	Ulcer of the stomach	2	—	—	—	1	1	—	—
120a	Enteritis and diarrhœa	2	—	—	—	1	1	—	—
120b	Ulceration of the intestines (except duodenum)	2	—	—	1	—	1	—	—
121	Appendicitis	5	—	1	2	—	1	1	—
122a	Hernia	1	—	—	—	—	—	1	—
122b	Intestinal obstruction	3	—	—	—	2	1	—	—
123b	Recto-vaginal fistula	1	—	—	—	—	1	—	—
125b	Other diseases of the liver	1	—	1	—	—	—	—	—
130	Acute nephritis	1	—	—	—	—	1	—	—
131	Chronic nephritis	19	1	—	1	7	6	3	1
132	Nephritis not stated to be acute or chronic	1	—	—	—	—	—	1	—
133	Other diseases of kidneys and ureters	1	—	—	—	—	—	1	—
133b	Hydronephrosis	1	—	1	—	—	—	—	—
139b	Hæmorrhagic metritis	1	—	—	1	—	—	—	—
152	Psoas abscess	1	—	—	—	—	1	—	—
155	Other diseases of the bones	1	—	—	—	1	—	—	—
157c	Congenital malformation of heart	6	—	2	1	1	1	1	—
157ib	Congenital malformation of circulatory system	2	—	1	1	—	—	—	—
157id	Congenital malformation of genito-urinary system	2	—	—	—	1	1	—	—
163–198	Violence	24	—	—	4	12	5	3	—
	Total	**390**	**6**	**58**	**83**	**109**	**80**	**55**	**4**
	Single	21	3	7	5	4	1	1	—
	Married	365	3	46	76	105	79	52	4
	Widowed	4	—	—	2	—	—	2	—
	Associated with abortion (included above)	37	2	8	7	9	7	4	—
	Single	5	1	1	2	1	—	—	—
	Married	32	1	7	5	8	7	4	—
	Widowed	—	—	—	—	—	—	—	—

Table CXXXb.—Deaths of Women, including non-civilians, not classed to Pregnancy or Childbearing but certified as associated therewith. 1947.

	Causes of death	All ages	15–	20–	25–	30–	35–	40–	45 and over
13	Tuberculosis of the respiratory system	24	2	5	11	3	3	—	—
14–22	Other forms of tuberculosis	3	—	1	2	—	—	—	—
24a	Septicæmia	1	—	—	—	1	—	—	—
27d	Other or unspecified forms of dysentery	1	—	1	—	—	—	—	—
33	Influenza	2	—	1	—	—	—	1	—
36 : 1	Acute poliomyelitis	4	—	1	1	—	2	—	—
37a	Acute encephalitis lethargica	1	—	—	1	—	—	—	—
45–55	Cancer	13	—	3	2	5	3	—	—
56	Non-malignant tumours	11	—	1	2	3	2	3	—
57	Tumours of undetermined nature	1	—	—	—	1	—	—	—
58b	Acute rheumatic endocarditis	2	—	—	1	—	—	1	—
61	Diabetes mellitus	1	—	—	—	1	—	—	—
62 : 2	Hypopituitarism	1	—	—	1	—	—	—	—
62 : 3	Pituitary necrosis	2	—	2	—	—	—	—	—
63b	Exophthalmic goitre	3	—	—	1	1	—	1	—
65b	Suprarenal apoplexy	1	—	—	1	—	—	—	—
72a	Primary purpura	3	—	—	—	1	1	1	—
73c	Hypochromic anæmias	2	—	—	1	1	—	—	—
73d	Other anæmias	2	—	1	—	1	—	—	—
74a	Leukæmia	3	—	—	—	2	—	1	—
76a	Agranulocytosis	1	—	—	—	—	1	—	—
82 : 4	Landry's paralysis	1	—	1	—	—	—	—	—
83a	Cerebral hæmorrhage	7	—	—	3	1	2	—	1
83d	Hemiplegia	1	—	—	—	—	1	—	—
85	Epilepsy	5	—	1	1	1	2	—	—
87a	Chorea	1	—	1	—	—	—	—	—
90b	Adherent pericarditis	1	—	—	—	1	—	—	—
91a, b	Acute or subacute bacterial endocarditis	4	—	—	2	1	1	—	—
92b : 1	Mitral valve disease	58	1	8	20	15	9	5	—
92b : 2	Rheumatic endocarditis	9	1	3	3	2	—	—	—
92c	Unspecified valvular lesions or endocarditis	4	—	1	1	—	1	1	—
93b	Chronic myocarditis specified as rheumatic	2	—	—	1	1	—	—	—
93c : 1	Cardiovascular degeneration	1	—	—	—	—	1	—	—
93c : 2	Fatty heart	4	—	1	1	—	1	1	—
93c : 3	Other myocardial degeneration	3	—	—	—	1	1	1	—
93d	Myocarditis not distinguished as acute or chronic	2	—	—	—	—	2	—	—
94	Diseases of the coronary arteries	2	—	—	1	—	1	—	—
95	Other diseases of the heart	4	—	1	1	—	1	1	—
96	Aneurysm (except of heart and aorta)	1	—	—	—	—	1	—	—
99	Other diseases of the arteries	1	—	1	—	—	—	—	—
100a	Varices	3	—	—	—	1	—	2	—
100b	Other diseases of the veins	2	—	1	—	1	—	—	—
102	High blood pressure (idiopathic)	1	—	—	—	1	—	—	—
106	Bronchitis	5	—	—	2	—	3	—	—
107	Broncho-pneumonia	1	—	—	—	1	—	—	—
108	Lobar pneumonia	4	—	2	1	1	—	—	—
109	Pneumonia (unspecified)	1	—	—	—	—	1	—	—
112	Asthma	3	—	1	—	2	—	—	—
114e : 1	Fibrosis of lung	1	—	—	—	—	—	1	—
120b	Ulceration of the intestines (except duodenum)	2	—	—	—	1	1	—	—
121	Appendicitis	10	1	2	3	2	—	2	—
122a	Hernia	1	—	—	—	1	—	—	—
122b	Intestinal obstruction	1	—	—	—	—	1	—	—
123b	Gangrene of the intestine	1	—	1	—	—	—	—	—
124	Cirrhosis of liver	1	—	—	—	—	1	—	—
125b	Other diseases of the liver	2	—	—	—	2	—	—	—
128	Diseases of the pancreas	2	—	—	2	—	—	—	—
131	Chronic nephritis	19	1	1	4	6	5	1	1
133	Other diseases of kidneys and ureters	6	—	—	3	—	2	1	—
134	Calculi of kidneys	1	—	—	1	—	—	—	—
157c	Congenital malformation of heart	7	—	2	2	3	—	—	—
157ib	Congenital malformation of circulatory system	5	—	1	2	—	2	—	—
157ic	Congenital malformation of digestive system	1	—	—	1	—	—	—	—
157id	Congenital malformation of genito-urinary system	1	—	—	—	1	—	—	—
163–198	Violence	33	1	4	5	9	11	3	—
200a : 2	Other ill-defined causes	1	—	—	—	—	1	—	—
	Total	**308**	**7**	**49**	**84**	**75**	**64**	**27**	**2**
	Single	15	1	2	5	5	2	—	—
	Married	290	6	47	77	70	61	27	2
	Widowed	3	—	—	2	—	1	—	—
	Associated with abortion (included above)	44	2	10	15	10	7	—	—
	Single	2	—	1	1	—	—	—	—
	Married	41	2	9	13	10	7	—	—
	Widowed	1	—	—	1	—	—	—	—

Table CXXX shows the numbers of deaths classed to each cause in the International List with mention of pregnancy, abortion or childbirth as an *associated condition* but not as the underlying cause of death, in each year 1946 and 1947. The mean annual total of such deaths decreased from 566 in 1937–39 to 414 in 1940–42 and was 430 in 1943–45. In 1946 the total fell to 390 and in 1947 to 308. Chronic affections of the valves and endocardium accounted for 142 of the 698 deaths in the two years, or 20·3 per cent. as in 1940–45. Other forms of heart disease contributed 56, or 8·0 per cent., compared with 11·5 in 1940–42 and 8·5 in 1943–45 ; tuberculosis accounted for 68, or 9·7 per cent. compared with 9·8 and 8·4. Pneumonia deaths were 23 in 1946 and only six in 1947, whereas in 1937–39 they formed 15 per cent. of the total. Nephritis and other kidney diseases accounted for 49, or 7·0 per cent. as in 1940–45.

Table CXXXI.—Deaths, including those of non-civilians, with mention of Cæsarean Section, 1940 to 1947.

	1940	1941	1942	1943	1944	1945	1946	1947
Classed to Nos. 146–150								
Placenta prævia	10	11	21	20	19	12	19	8
Toxæmias	14	19	16	15	11	17	16	17
Contracted pelvis	22	15	29	18	24	12	13	9
Malpresentation	4	12	9	7	9	11	11	5
Disproportion	9	18	13	23	22	19	25	21
Difficult labour	10	8	13	6	6	9	7	8
Other complications	16	11	22	17	32	20	13	13
Reason not stated	22	27	18	15	26	12	17	9
Classed to other causes	17	26	32	39	41	29	39	29
Total with mention of Cæsarean Section	**124**	**147**	**173**	**160**	**190**	**141**	**160**	**119**

Table CXXXI classifies the deaths with mention of Cæsarean Section on the death certificate in each year 1940 to 1947, according to the reason stated on the certificate. In 1946–47 there were 279 such deaths, compared with 271 in 1940–41, 333 in 1942–43 and 331 in 1944–45. A quarter were attributed to conditions other than complications of pregnancy and childbirth.

Table CXXXIIa.—Deaths, including those of non-civilians, from Pregnancy and Childbearing classified by Cause, Age, Civil Condition and Outcome of Pregnancy. 1946.

	Causes of death	Deaths following or accompanied by				Deaths in the pregnant state	No information received	Total
		Live birth(s)	Still-birth(s)	Live and still birth	Abortion			
140–150	**All Causes**	**446**	**268**	**12**	**157**	**195**	**127**	**1,205**
	Single	21	18	—	39	9	11	98
	Married	423	243	12	113	185	116	1,092
	Widowed	2	7	—	5	1	—	15
	Ages 15–	11	7	—	3	1	1	23
	20–	67	22	1	20	22	16	148
	25–	106	63	7	38	39	20	273
	30–	119	85	1	47	61	32	345
	35–	103	57	2	37	49	30	278
	40–	37	31	1	10	20	11	110
	45 and over	3	3	—	2	3	17	28
140, 141	Abortion	—	—	—	157	—	—	157
142	Ectopic gestation	—	—	—	—	57	—	57
143a	Placenta prævia	—	—	—	—	15	—	15
b	Premature separation	—	—	—	—	7	—	7
c	Other hæmorrhage of pregnancy	—	—	—	—	3	—	3
144a, b	Eclampsia and albuminuria of pregnancy	—	—	—	—	72	—	72
c	Acute yellow atrophy	—	—	—	—	13	—	13
d	Other toxæmias of pregnancy	—	—	—	—	12	—	12
145	Other diseases and accidents of pregnancy	—	—	—	—	16	—	16
146a	Placenta prævia (with childbirth)	16	22	1	—	—	9	48
b	Premature separation (with childbirth)	—	9	—	—	—	3	12
c	Other hæmorrhages of childbirth	4	13	—	—	—	—	17
d	Other hæmorrhages after childbirth	84	18	—	—	—	15	117
147a, b	General or local puerperal infection	30	10	—	—	—	12	52
c	Puerperal thrombophlebitis	33	6	—	—	—	8	47
d	Puerperal embolism and sudden death	35	10	1	—	—	9	55
148a, b	Puerperal eclampsia and albuminuria	90	86	4	—	—	17	197
c	Acute yellow atrophy (with childbirth)	21	16	2	—	—	2	41
d	Other puerperal toxæmias	8	11	—	—	—	5	24
149	Other accidents of childbirth	119	66	4	—	—	44	233
150a	Mastitis	3	—	—	—	—	—	3
b	Puerperal psychoses	1	—	—	—	—	—	1
c	Other conditions	2	1	—	—	—	3	6

Table CXXXII analyses the deaths in each year 1946 and 1947 according to the outcome of the pregnancy, the necessary information being obtained by medical enquiries in cases where the certificate did not supply it. In some instances an enquiry as to whether a live or still birth had resulted leads to amendment of the classification of the death, since the certificate does not always make it clear whether delivery occurred at all. For example, death from "obstructed labour" may have taken place without delivery having been effected, in which case the correct assignment is to No. 145 and not to No. 149. For 252 out of 2,263 deaths in the two years no information was obtained as to whether there had been a live birth, stillbirth or abortion.

Table CXXXIIb.—Deaths, including those of non-civilians, from Pregnancy and Childbearing classified by Cause, Age, Civil Condition and Outcome of Pregnancy. 1947.

	Causes of death	Deaths following or accompanied by				Deaths in the pregnant state	No information received	Total
		Live birth(s)	Still-birth(s)	Live and still birth	Abortion			
140–150	**All Causes**	**438**	**188**	**7**	**140**	**160**	**125**	**1,058**
	Single	15	8	—	16	15	5	59
	Married	422	178	7	113	144	117	981
	Widowed	1	2	—	11	1	3	18
	Ages 15–	10	5	1	2	5	—	23
	20–	79	28	1	30	26	24	188
	25–	89	34	2	33	32	27	217
	30–	129	58	—	32	41	31	291
	35–	85	44	3	27	38	25	222
	40–	44	18	—	15	16	11	104
	45 and over	2	1	—	1	2	7	13
140, 141	Abortion	—	—	—	140	—	—	140
142	Ectopic gestation	—	—	—	—	40	—	40
143a	Placenta prævia	—	—	—	—	5	—	5
b	Premature separation	—	—	—	—	4	—	4
c	Other hæmorrhage of pregnancy	—	—	—	—	6	—	6
144a, b	Eclampsia and albuminuria of pregnancy	—	—	—	—	62	—	62
c	Acute yellow atrophy	—	—	—	—	7	—	7
d	Other toxæmias of pregnancy	—	—	—	—	12	—	12
145	Other diseases and accidents of pregnancy	—	—	—	—	24	—	24
146a	Placenta prævia (with childbirth)	11	8	—	—	—	8	27
b	Premature separation (with childbirth)	2	8	—	—	—	4	14
c	Other hæmorrhages of childbirth	3	3	—	—	—	—	6
d	Other hæmorrhages after childbirth	87	18	—	—	—	12	117
147a, b	General or local puerperal infection	18	9	1	—	—	6	34
c	Puerperal thrombophlebitis	43	3	1	—	—	7	54
d	Puerperal embolism and sudden death	42	9	—	—	—	5	56
148a, b	Puerperal eclampsia and albuminuria	87	58	1	—	—	31	177
c	Acute yellow atrophy (with childbirth)	16	17	—	—	—	5	38
d	Other puerperal toxæmias	12	1	—	—	—	3	16
149	Other accidents of childbirth	111	51	4	—	—	40	206
150a	Mastitis	3	—	—	—	—	—	3
b	Puerperal psychoses	1	—	—	—	—	1	2
c	Other conditions	2	3	—	—	—	3	8

Comparison is made below between the percentage distribution of all deaths classified to Nos. 140–150 in 1946–47 and in preceding years according to the outcome of the pregnancy.

Outcome	All ages				Under 30		30 and over	
	1940–41	1942–43	1944–45	1946–47	1940–45	1946–47	1940–45	1946–47
Live birth(s)	33·5	37·4	36·4	39·1	38·3	41·5	33·9	37·5
Still birth(s)	21·0	18·5	20·9	20·2	19·2	18·2	20·6	21·4
Live and still birth	0·5	0·7	0·5	0·8	0·5	1·4	0·7	0·5
Abortion	17·9	19·3	20·0	13·1	19·9	14·5	18·3	12·3
Death in pregnant state	15·7	13·8	12·5	15·7	12·4	14·3	15·4	16·5
Not known	11·4	10·3	9·7	11·1	9·6	10·1	11·1	11·8
Total	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**
No. of deaths	3,318	3,291	2,752	2,263	3,892	872	5,469	1,391

The ratio of live birth to stillbirth deliveries in connection with maternal deaths in successive years 1940 to 1947 was 1·48, 1·74, 2·14, 1·91, 1·66, 1·85, 1·66, 2·33, showing considerable improvement in 1947. Amongst all births the ratio increased from 27 in 1940 to 40 in 1947, so the chance of survival for the child in the event of maternal death is now about seven-tenths of the normal. When death resulted from placenta prævia or other hæmorrhage during childbirth the ratio of live to still birth was 0·5 in 1940–45 and 0·6 in 1946–47; and in the case of toxæmia deaths it was 1·0 in 1940–45, 1·1 in 1946 and 1·5 in 1947.

Table CXXXIIIa.—Deaths of Married Women, including non-civilians, classed to Pregnancy and Childbearing according to previous Fertility and Outcome of the Pregnancy which resulted in Death. 1946.

Number of previous pregnancies	Total of known birth order	With live or still birth					Total with live or still birth	With abortion	Deaths in the pregnant state
		Single birth		Multiple birth					
		Live	Still	Live only	Live and still	Still only			
0 ...	363	187	97	9	6	6	305	13	45
1 ...	181	103	35	3	3	2	146	15	20
2 ...	110	47	28	2	—	—	77	19	14
3 ...	61	17	20	—	1	1	39	14	8
4 ...	37	11	7	2	—	—	20	13	4
5 ...	28	7	7	1	1	—	16	8	4
6 ...	15	3	6	—	—	—	9	4	2
7 ...	11	3	5	—	—	—	8	3	—
8 ...	9	2	4	—	—	—	6	1	2
9 ...	4	—	1	—	—	—	1	—	3
10 ...	3	1	1	—	—	—	2	—	1
11 ...	1	—	1	—	—	—	1	—	—
12 ...	2	—	2	—	—	—	2	—	—
13 ...	1	1	—	—	—	—	1	—	—
14 ...	2	—	1	—	—	—	1	—	1
Totals of above ...	**828**	**382**	**215**	**17**	**11**	**9**	**634**	**90**	**104**

Table CXXXIII shows the distribution of the deaths in 1946 and 1947 according to the number of previous pregnancies, distinguishing deaths in the pregnant state, those following abortion and those accompanied by a live and still birth. This information was obtained for 1,582 deaths out of a total of 2,263. Out of the 1,207 deaths following delivery of live or still born children, 80 followed multiple maternities, a proportion of 6·6 per cent. compared with 4·9 in 1940–45. Since multiple maternities form about 1·2 per cent. of all maternities this indicates that the risk of maternal death after delivery is enhanced four or five times when the pregnancy is a multiple one. The proportion of first pregnancies was 46 per cent., compared with 47 per cent. for maternal deaths during 1940–45.

Table CXXXIIIb.—Deaths of Married Women, including non-civilians, classed to Pregnancy and Childbearing according to previous Fertility and Outcome of the Pregnancy which resulted in Death. 1947.

Number of previous pregnancies	Total of known birth order	With live or still birth					Total with live or still birth	With abortion	Deaths in the pregnant state
		Single birth		Multiple birth					
		Live	Still	Live only	Live and still	Still only			
0 ...	357	195	80	14	3	3	295	25	37
1 ...	156	82	30	6	2	2	122	16	18
2 ...	102	46	18	4	1	—	69	21	12
3 ...	47	18	10	1	—	—	29	9	9
4 ...	32	12	8	2	1	1	24	6	2
5 ...	19	3	3	1	—	1	8	10	1
6 ...	13	4	5	—	—	—	9	2	2
7 ...	8	5	—	—	—	—	5	2	1
8 ...	4	—	2	1	—	—	3	1	—
9 ...	4	2	1	—	—	—	3	1	—
10 ...	3	—	1	—	—	—	1	2	—
11 ...	2	2	—	—	—	—	2	—	—
12 ...	4	2	1	—	—	—	3	—	1
13 ...	2	—	—	—	—	—	—	1	1
15 ...	1	—	—	—	—	—	—	—	1
Totals of above ...	**754**	**371**	**159**	**29**	**7**	**7**	**573**	**96**	**85**

Table CXXXIV gives the rates of maternal mortality and fatal abortion, with distinction of sepsis, in each region and class of area, and also the notification rates for puerperal pyrexia, in each year 1946 and 1947. The highest total death rates were in Wales as in 1940–45, and the rural excess for maternal death rates excluding abortion was maintained. The rate of pyrexia notification declined from 11·5 per thousand live and still births in 1940–45 to 8·5 in 1946 and 7·2 in 1947; and the ratio of pyrexia notifications to sepsis deaths rose from 16·5 to 27·1 and 28·0.

Table CXXXIV.—Distribution throughout England and Wales of Mortality from Pregnancy, Childbirth, and Abortion, and of Prevalence of Puerperal Pyrexia. 1946 and 1947.

Area	Per 1,000 live and still births						Notified cases of pyrexia per death from sepsis
	Deaths from					Notified cases of pyrexia*	
	Maternal sepsis	Other maternal causes	Post abortive sepsis	Other abortion	Total including abortion		
1946							
England and Wales...	**0·18**	**1·06**	**0·13**	**0·06**	**1·43**	**8·5**	**27·1**
Regional Summary :							
South East	0·16	0·96	0·12	0·06	1·30	9·5	33·4
Greater London ...	0·15	0·86	0·16	0·07	1·25	10·8	33·9
Remainder of South East	0·18	1·10	0·06	0·03	1·37	7·7	32·5
North	0·21	1·07	0·17	0·08	1·52	7·7	20·4
North I	0·21	0·88	0·21	0·06	1·36	7·6	18·2
North II	0·25	1·42	0·11	0·14	1·92	8·2	23·1
North III ...	0·23	0·92	0·16	0·10	1·41	6·8	17·8
North IV	0·19	1·14	0·17	0·06	1·56	8·1	22·3
Midland	0·18	0·99	0·08	0·03	1·28	8·6	33·2
Midland I ...	0·17	0·97	0·07	0·03	1·24	8·5	35·7
Midland II ...	0·19	1·04	0·11	0·02	1·36	8·8	29·3
East	0·13	0·88	0·05	0·08	1·14	8·6	47·6
South West	0·19	1·23	0·10	0·02	1·54	9·0	31·3
Wales	0·18	1·81	0·24	0·02	2·26	6·4	15·0
Wales I	0·06	1·74	0·25	0·03	2·08	7·7	25·5
Wales II	0·54	1·99	0·23	—	2·76	2·6	3·4
Density Summary :							
County Boroughs† ...	0·15	0·95	0·13	0·05	1·28	11·4	40·3
Other Urban Districts†	0·22	1·16	0·12	0·05	1·54	6·3	18·9
Rural Districts† ...	0·21	1·32	0·12	0·05	1·70	4·4	13·6

Table CXXXIV. (*contd.*)

Area	Per 1,000 live and still births						Notified Cases of pyrexia per death from sepsis
	Deaths from					Notified Cases of pyrexia*	
	Maternal sepsis	Other maternal causes	Post abortive sepsis	Other abortion	Total including abortion		
	1947						
England and Wales...	**0·16**	**0·86**	**0·10**	**0·06**	**1·17**	**7·2**	**28·0**
Regional Summary :							
South East	0·13	0·70	0·13	0·05	1·01	8·1	31·2
Greater London ...	0·12	0·66	0·16	0·06	1·01	9·3	33·1
Remainder of South East	0·15	0·75	0·08	0·04	1·02	6·5	28·0
North	0·15	0·87	0·10	0·06	1·19	7·2	28·8
North I	0·18	0·96	0·10	0·08	1·32	7·3	25·9
North II	0·03	0·56	0·13	0·03	0·75	6·2	38·0
North III ...	0·18	0·91	0·08	0·05	1·23	6·3	24·1
North IV	0·15	0·89	0·10	0·07	1·21	7·8	31·4
Midland	0·22	0·85	0·07	0·05	1·19	6·8	23·5
Midland I ...	0·26	0·87	0·07	0·05	1·25	6·8	20·6
Midland II ...	0·14	0·81	0·07	0·04	1·05	6·8	32·3
East	0·12	1·04	0·02	—	1·18	6·7	46·3
South West	0·27	1·03	0·13	0·11	1·55	7·7	19·0
Wales	0·11	1·41	0·06	0·06	1·63	4·3	24·9
Wales I	0·10	1·51	0·08	0·05	1·75	5·5	30·1
Wales II	0·14	1·12	—	0·07	1·33	0·9	6·5
Density Summary :							
County Boroughs† ...	0·19	0·81	0·10	0·07	1·16	10·2	36·3
Other Urban Districts†	0·12	0·92	0·08	0·04	1·17	5·0	24·4
Rural Districts† ...	0·22	1·05	0·07	0·06	1·39	3·5	12·1

* Includes puerperal fever where notified separately.
† Excluding Greater London.

163, 164.—Suicide.—During the five years 1935–39 deaths of males by suicide averaged 3,464 per year, and during the next six years 2,673 per year. In 1946 there were 2,840 and in 1947, 2,825 male deaths. Deaths of females by suicide in 1935–39 averaged 1,670 per year and in 1940–45, 1,391 ; in 1946 there were 1,645 deaths and in 1947, 1,681. The crude civilian death rates since 1936 per million living at all ages have been as follows :—

Sex	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Males ...	176	175	180	168	159	135	125	134	135	136	144	137
Females ...	75	79	80	78	75	62	62	63	58	66	75	76

In contrast with the female rate the male rates in 1946 and 1947 contined well below the pre-1939 level.

Table CXXXV.—Suicide : Numbers of Deaths of Civilians, and of non-Civilians registered in England and Wales, at different Ages. 1940 to 1947.

	Deaths of Civilians							Deaths of non-Civilians registered in England and Wales				
	0–	15–	25–	45–	65–	75 and over	All ages	15–	25–	45–	65 and over	All ages
Males												
1940	4	110	684	1,344	553	199	2,894	135	198	32	—	365
1941	4	100	572	1,008	459	175	2,318	137	322	34	—	493
1942	5	99	492	920	417	162	2,095	117	237	28	—	382
1943	3	97	537	951	449	148	2,185	93	204	16	—	313
1944	4	96	473	986	435	196	2,190	72	215	17	—	304
1945	6	78	462	1,005	468	219	2,238	51	190	17	1	259
1946	7	89	705	1,095	528	249	2,673	36	116	15	—	167
1947	4	114	630	1,164	520	262	2,694	30	87	14	—	131
Females												
1940	1	69	468	796	226	63	1,623	—	—	—	—	—
1941	—	48	417	650	178	46	1,339	2	1	—	—	3
1942	2	43	421	619	178	58	1,321	4	1	—	—	5
1943	1	48	463	593	188	50	1,343	4	1	—	—	5
1944	—	45	400	569	188	55	1,257	3	7	1	—	11
1945	1	54	441	665	206	65	1,432	2	2	—	—	4
1946	1	64	469	777	251	77	1,639	1	5	—	—	6
1947	—	58	442	790	292	98	1,680	—	1	—	—	1

Table CXXXVI.—Suicide : Mean Annual Death Rates at different Ages, 1861-1947. Comparative Mortality Indices, 1931-47.

	Mean annual rates per million living*										C.M.I* (1938 base)
	0–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over	
Males											
1861–70 ...	—	4	28	59	93	163	263	377	359	251	
1871–80 ...	—	4	24	64	104	179	276	408	416	335	
1881–90 ...	—	4	29	67	117	202	310	437	478	373	
1891–1900	—	5	34	84	142	241	348	456	479	386	
1901–10 ...	—	4	36	91	152	252	397	523	508	382	
1911–20 ...	—	3	32	69	122	196	278	389	380	350	
1921–25 ...	—	2	28	71	100	200	326	457	493	408	
1926–30 ...	—	2	35	84	122	222	366	513	530	464	
1931–35 ...	—	2	39	96	141	209	379	542	534	483	1·044
1936 ...	—	2	29	91	120	192	300	491	478	436	0·993
1937 ...	—	4	32	81	132	173	298	467	497	455	0·981
1938 ...	—	1	28	78	123	185	308	490	496	505	1·000
1939 ...	—	1	35	87	109	164	270	464	467	445	0·922
1940 ...	—	3	27	88	95	150	243	393	457	487	0·833
1941 ...	—	3	37	81	100	130	180	295	374	414	0·688
1942 ...	—	3	42	77	96	117	172	258	331	366	0·630
1943 ...	—	2	38	104	110	140	182	262	348	314	0·668
1944 ...	—	3	34	111	108	126	190	269	332	395	0·669
1945 ...	—	4	34	82	110	116	189	272	352	421	0·668
1946 ...	—	5	30	71	93	145	199	300	391	465	0·723
1947 ...	—	3	36	69	85	114	207	314	383	480	0·708

Table CXXXVI. (*contd.*)

	Mean annual rates per million living*										C.M.1* (1938 base)
	0–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over	
Females†											
1861–70 ...	—	3	31	31	35	53	84	87	83	70	
1871–80 ...	—	3	26	33	39	54	81	95	92	64	
1881–90 ...	—	3	34	40	43	64	84	92	86	53	
1891–1900	—	4	37	41	52	76	96	100	88	52	
1901–10 ...	—	3	34	45	56	80	109	109	88	49	
1911–20 ...	—	2	30	41	50	74	100	102	81	52	
1921–25 ...	—	1	23	40	48	78	120	125	92	60	
1926–30 ...	—	0	27	45	66	96	148	158	123	66	
1931–35 ...	—	—	23	49	77	108	153	165	135	84	0·793
1936 ...	—	—	19	39	61	99	164	161	134	68	0·953
1937 ...	—	1	13	46	73	100	155	162	152	83	0·989
1938 ...	—	1	15	39	68	103	163	176	134	96	1·000
1939 ...	—	1	12	39	72	101	154	164	144	107	0·980
1940 ...	—	1	15	28	51	89	138	175	151	94	0·919
1941 ...	—	—	11	20	55	70	113	140	117	67	0·756
1942 ...	—	1	11	18	48	78	111	127	114	81	0·739
1943 ...	—	1	7	25	54	86	104	122	117	66	0·746
1944 ...	—	—	5	24	48	74	97	118	114	70	0·693
1945 ...	—	1	10	27	55	78	113	135	122	79	0·781
1946 ...	—	1	15	27	52	87	135	157	146	92	0·887
1947 ...	—	—	11	28	51	80	134	160	166	114	0·900

* Civilians only from 3rd September, 1939, for males and from 1st June, 1941, for females.

†The female rates up to and including 1939 include some cases of self-induced abortion, which was excluded from suicide from 1940.

Table CXXXV gives the numbers of deaths at various ages from 1940 to 1947 distinguishing deaths of non-civilians registered in this country. Table CXXXVI gives death rates by suicide for ten separate age groups from 1861–70 to 1931–35 and for single years thereafter up to 1947, adjustment having been made to the pre-1940 rate to compensate for the transfer since then of fatal cases of self-induced abortion, previously classed with suicide, to the group of other abortion deaths. In the table which follows the death rates of various ages in 1941–45, 1946, and 1947 are expressed in terms of the mean annual rates for 1936–40 taken as a hundred.

	15–	20–	25–	35–	45–	55–	65–	75 and over
Males								
1936–40	100	100	100	100	100	100	100	100
1941–45	123	107	91	73	64	59	72	82
1946	100	84	80	84	70	65	82	100
1947	120	81	73	66	73	68	80	103
Females								
1936–40	100	100	100	100	100	100	100	100
1941–45	60	61	80	79	70	76	82	81
1946	100	71	80	89	87	93	102	102
1947	73	74	78	82	86	95	116	127

The suicide rate among elderly men (75 and over) rose at the end of the war, and in 1947 was just above the mean annual rate for 1936–40. With the exception of youths aged 15–19, the rates for all other groups of males were lower in 1946 and 1947 than in 1936–40. Particularly noteworthy are the male rates at ages 20–24 which were higher in 1941–45 than in the previous five years but dropped sharply in 1946 and 1947. Among females aged 65 and over the rates in 1946 and 1947 exceeded those of 1941–45 and also of 1936–40. In none of the other female age groups, except 15–19 in 1946, was there a return to the pre-war level, though at most ages the rates were higher in 1946 and 1947 than in 1941–45. Whereas wartime conditions (for example full employment) were such as to lead to less frequent suicides at almost every age, since the end of the 1939–45 war men over 75 and women over 65 have for some reason manifested a rapid increase again in the numbers resorting to suicide.

The Comparative Mortality Indices in Table CXXXVI show that, allowing for the changing age structure of the population, suicides of males at all ages in 1947 were 71 per cent. of those in 1938, while for females the proportion was 90 per cent.

Table CXXXVII.—Suicide : Death Rates per million living by Sex at Ages 15-44, 45-64, 65 and over in Regions and different classes of Area, 1947.

Area	15–44		45–64		65 and over	
	Males	Females	Males	Females	Males	Females
England and Wales	**86**	**52**	**251**	**145**	**405**	**146**
Regional Summary :						
South East	92	65	238	144	384	167
Greater London	86	70	215	134	381	163
Remainder of South East ...	99	59	268	156	387	171
North	82	41	227	141	372	129
North I	94	32	213	98	348	114
North II	60	51	250	99	244	174
North III	62	43	235	156	409	142
North IV	95	41	223	156	389	116
Midland	81	55	287	147	464	158
Midland I	75	53	281	132	480	151
Midland II	92	59	298	176	436	171
East	89	46	281	179	446	168
South West	100	33	302	168	437	108
Wales	82	39	277	117	440	95
Wales I	85	37	249	117	466	116
Wales II	72	46	352	117	383	58
Density Summary :						
County Boroughs*	88	52	261	162	412	154
Other Urban Districts* ...	85	45	250	149	413	152
Rural Districts*	86	43	275	119	402	109

* Excluding Greater London.

The **regional distribution** of suicide rates in 1947 is given in Table CXXXVII for three age groups of males and females. The following table compares regional rates with those of England and Wales and also shows the ratio of male to female suicide rates in each area :—

Area	Ages 15–44			45–64			65 and over		
	Male	Female	M./F.	Male	Female	M./F.	Male	Female	M./F.
England and Wales	**100**	**100**	**1·65**	**100**	**100**	**1·73**	**100**	**100**	**2·77**
Regional Summary :									
Greater London	100	135	1·23	86	92	1·60	94	112	2·34
Remainder of South East ...	115	113	1·68	107	108	1·72	96	117	2·26
North	95	79	2·00	90	97	1·61	92	88	2·88
Midland	94	106	1·47	114	101	1·95	115	108	2·94
East	103	88	1·93	112	123	1·57	110	115	2·65
South West	116	63	3·03	120	116	1·80	108	74	4·05
Wales	95	75	2·10	110	81	2·37	109	65	4·63

The ratio of male to female suicide rates was low in Greater London and high in Wales at each age ; and at ages 15–44 and over 65 it was also high in the South West. Rates of suicide were low in the North for each sex and in Wales they were low for females.

In the density aggregates, suicide rates in 1947 expressed as a percentage of England and Wales, and the ratio of male to female rates were :—

	Ages 15–44			45–64			65 and over		
	Male	Female	M./F.	Male	Female	M./F.	Male	Female	M./F.
England and Wales	**100**	**100**	**1·65**	**100**	**100**	**1·73**	**100**	**100**	**2·77**
County Boroughs*	102	100	1·69	104	112	1·61	102	105	2·68
Other Urban Districts* ...	99	87	1·89	100	103	1·48	102	104	2·72
Rural Districts*	100	83	2·00	110	82	2·31	99	75	3·69

* Excluding Greater London.

Among men the rates varied little at any age. Among women, however, there was a clear gradation at each age, declining from county boroughs to rural districts, the sex ratio changing conversely.

Method of Suicide.—Details of the methods whereby suicide was effected are given by age in Tables 21 and 25 of Part I. In the following table comparison is made of the methods employed in 1935 and, for civilians only, in 1940, 1946, and 1947, the numbers by each method being expressed per thousand total suicides.

	Males				Females			
	1935	1940	1946	1947	1935	1940	1946	1947
Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Poisoning by coal gas	307	327	318	341	407	467	480	510
Other poisoning	103	82	76	88	190	170	134	153
Hanging, strangulation	175	189	221	216	108	99	102	98
Drowning	130	128	129	112	173	146	162	139
Firearms, explosives	63	91	79	89	4	13	6	8
Cutting and piercing instruments	139	110	103	80	45	36	34	26
Jumping from high places	30	36	27	26	40	39	42	40
On railways	48	30	43	40	27	20	34	18
Other and unspecified	5	8	4	8	7	9	6	7
Actual total number all methods	**3,525**	**2,894**	**2,673**	**2,694**	**1,659**	**1,623**	**1,639**	**1,680**

Among men there was an increase in 1946 and 1947 in the proportion of suicides by hanging and strangulation, while suicide by means of cutting and piercing instruments became relatively less frequent.

Among women changes in the methods employed were larger, use of coal gas increasing greatly, with corresponding reductions in suicides by other forms of poisoning, by firearms, and by cutting instruments.

The table opposite shows the number and proportionate distribution of the methods of suicide at different ages during 1946 and 1947 combined :—

Among civilian males the method of suicide showing greatest variations in relative frequency with age was the use of cutting and piercing instruments with ten per thousand suicides at ages 15–24, rising to 135 per thousand at ages over 65: The proportion of male suicides by drowning also increased with age. The relative frequency of suicide by means of firearms declined with age and, as would be expected, this method was almost entirely avoided by women of older ages. Suicide on railways contributed a fairly constant proportion among men at each age up to 65, but among women the frequency of this method became less as age advanced.

Among non-civilian males suicide by hanging was the means used most often at each age, followed in frequency by firearms. Among non-civilian women seven deaths only were ascribed to suicide in the two years.

	MALE								FEMALE						
	Civilians					Non-civilians			Civilians					Non-civilians	
	10–	15–	25–	45–	65 and over	15–	25–	45–64	10–	15–	25–	45–	65 and over	15–	25–44
	Actual Numbers														
Total	**11**	**203**	**1,335**	**2,259**	**1,559**	**66**	**203**	**29**	**1**	**122**	**911**	**1,567**	**718**	**1**	**6**
Poisoning by coal gas	5	60	480	733	492	10	14	3	—	58	452	762	370	—	—
Other poisoning	1	23	148	171	97	2	3	—	1	17	162	214	83	1	2
Hanging, strangulation	4	57	245	508	358	22	120	14	—	11	79	173	69	—	2
Drowning	—	14	113	289	229	—	4	—	—	17	97	270	116	—	1
Firearms, explosives	1	32	158	174	87	21	40	10	—	3	7	11	2	—	—
Cutting or piercing instruments	—	2	63	215	211	1	8	—	—	—	20	52	27	—	—
Jumping from high places	—	4	36	63	39	3	—	—	—	4	42	48	43	—	1
On railways	—	9	78	93	42	7	11	2	—	10	43	28	6	—	—
Other and unspecified	—	2	14	13	4	—	3	—	—	2	9	9	2	—	—
	Proportionate Distribution														
Total	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Poisoning by coal gas	454	295	360	324	315	152	69	103	—	476	496	486	514	—	—
Other poisoning	91	113	111	76	62	30	15	—	1,000	139	178	137	116	1,000	333
Hanging, strangulation	364	281	184	225	230	334	591	483	—	90	87	110	96	—	333
Drowning	—	69	85	128	147	—	20	—	—	139	106	172	162	—	167
Firearms, explosives	91	158	118	77	56	318	197	345	—	25	8	7	3	—	—
Cutting and piercing instruments	—	10	47	95	135	15	39	—	—	—	22	33	38	—	—
Jumping from high places	—	20	27	28	25	45	—	—	—	33	46	31	60	—	167
On railways	—	44	58	41	27	106	54	69	—	82	47	18	8	—	—
Other and unspecified	—	10	10	6	3	—	15	—	—	16	10	6	3	—	—

Regional Distribution of Methods of Suicide.—Table CXXXVIII shows numbers of deaths in 1947 by each method, and the proportionate distribution per 1,000 total, for the main groups of regions and the density aggregates.

Table CXXXVIII.—Suicide : Numbers of Deaths and proportionate distribution of Method by Sex in Regions and different classes of Area (civilians only), 1947.

	England and Wales	North	Midland and East	Wales	South West and South East*	Greater London	County Boroughs *	Other Urban Districts*	Rural Districts*
MALES									
Number of deaths									
Total (163,164)	**2,694**	**775**	**673**	**176**	**599**	**471**	**817**	**860**	**546**
Poisoning by coal gas (163ba) ...	919	323	200	34	165	197	379	293	50
Other poisoning (remndr. 163) ...	237	41	53	13	62	62	60	68	41
Hanging or strangulation (164a)	582	177	157	56	123	69	162	175	176
Drowning (164b)	301	100	91	18	63	29	74	120	78
Firearms and explosives (164c)...	241	42	66	22	89	22	37	67	115
Cutting or piercing instruments (164d)	216	53	61	18	52	32	57	82	45
Jumping from high places (164e)	70	20	13	4	15	18	23	17	12
On railways (164fa)	107	15	25	9	27	31	20	33	23
Others, including other crushing (164fb,g)	21	4	7	2	3	5	5	5	6
Proportionate distribution per 1,000 total									
Total	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Poisoning by coal gas	341	418	298	193	275	418	465	341	92
Other poisoning	88	53	79	74	104	144	73	79	75
Hanging or strangulation ...	216	228	233	319	205	146	198	203	322
Drowning	112	129	135	102	105	62	91	140	143
Firearms and explosives ...	89	54	98	125	149	47	45	78	211
Cutting or piercing instruments	80	68	91	102	87	68	70	95	82
Jumping from high places ...	26	26	19	23	25	38	28	20	22
On railways	40	19	37	51	45	66	24	38	42
Others	8	5	10	11	5	11	6	6	11
FEMALES									
Number of Deaths									
Total (163,164)	**1,680**	**470**	**391**	**73**	**380**	**366**	**543**	**529**	**242**
Poisoning by coal gas (163ba) ...	856	268	182	28	179	199	333	276	48
Other poisoning (remndr. 163) ...	257	51	60	12	57	77	58	81	41
Hanging or strangulation (164a)	165	46	39	10	47	23	43	51	48
Drowning (164b)	234	71	78	14	49	22	65	80	67
Firearms and explosives (164c)...	13	1	5	1	5	1	—	2	10
Cutting or piercing instruments (164d)	44	11	8	4	12	9	10	11	14
Jumping from high places (164e)	68	15	11	3	18	21	25	18	4
On Railways (164fa)	31	5	6	1	7	12	6	6	7
Others, including other crushing (164fb, g)	12	2	2	—	6	2	3	4	3
Proportionate distribution per 1,000 total									
Total	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Poisoning by coal gas	511	570	466	383	471	544	613	522	198
Other poisoning	153	109	153	164	150	210	107	153	169
Hanging or strangulation ...	98	98	100	137	124	63	79	96	198
Drowning	139	151	200	192	129	60	120	151	278
Firearms and explosives ...	8	2	13	14	13	3	—	4	41
Cutting or piercing instruments	26	23	20	55	32	25	18	21	58
Jumping from high places ...	40	32	28	41	47	57	46	34	17
On railways	18	11	15	14	18	33	11	11	29
Others	7	4	5	—	16	5	6	8	12

*Excluding Greater London.

Among males the method most frequently employed in each area, except Wales, was poisoning by coal gas. The proportionate rate was highest, 418 per 1,000 suicides, in the North and in Greater London. There was a pronounced difference in the frequency of use of coal gas as a means of suicide between county boroughs and other urban districts on the one hand, where it accounted for more than one-third of all male deaths by suicide, and rural districts on the other hand, where, in the absence of a readily available supply of coal gas in many districts, it accounted for less than one-tenth of male suicides. Suicide by other poisonous substances was most frequent in Greater London, 144 per 1,000, and least frequent in the county boroughs, 73 per 1,000. Hanging and strangulation occurred relatively frequently in Wales, and also in the rural districts. It was relatively infrequent in Greater London, in this respect resembling suicide by drowning. Firearms were used in rural districts much more than in towns. Suicide on railways was most frequent in Greater London where the underground system is readily accessible, and occurred more often in rural districts and in small towns than in the county boroughs.

Coal gas was the method most used by females in each region, including Wales. In rural districts, however, it was exceeded in frequency by drowning and shared second place with hanging and strangulation. Drowning frequency was more than twice as great in rural districts as in large towns. There were no female deaths by suicide by means of firearms in the county boroughs. Suicide by cutting or piercing instruments was twice as frequent in Wales as in England and three times as frequent in rural districts as in towns. As in the case of males, suicide of women on railways was much more frequent in Greater London than elsewhere, but otherwise was more frequent in rural districts than in towns.

169. Deaths caused by Railway Accidents.—The average number of deaths per annum in the five years 1935–39 was 429 and in the next six years 1940–45, 572. In 1946 there were 418 deaths of civilian males and 41 of non-civilian males, 65 deaths of civilian females and two of non-civilian females, a total of 526 in the year. In 1947 deaths of males numbered 454 civilian and 11 non-civilian, and of females 50 civilian and no non-civilian, the total for the year being 515. Thus, although there was some reduction from the high figures prevailing during the war years, there was by no means a return to the pre-war level.

Table 25 shows that 71 of the 504 civilian deaths in 1947 resulted from accidents to trains, 29 from other accidents to occupants of trains (21 due to falls from trains and seven due to the head striking an external object), and 404 deaths from accidents to persons on the line, but of the total, 231 deaths of males and one of a female, constituting 46 per cent., were classified as occupational.

170, 171. Deaths caused by Motor and other Road Vehicles.—Annual deaths from motor vehicle accidents (No. 170) averaged 5,383 per year during 1935–38, 7,193 during 1939–41 and 4,665 during 1942–45. The number of deaths in 1946 was 4,193 (including 366 non-civilians) and in 1947, 4,071 (including 220 non-civilians). The reduction in deaths during the latter years of the 1939–45 has therefore been maintained in the first two post-war years ; this is not surprising in view of the restricted amount of motoring during these two years.

Deaths from tramway accidents on roads (No. 171a) as shown in Tables 6 and 21A, excluding collision between trams and motor vehicles, averaged 64 per annum in 1935–38, 146 in 1939–41 and 104 in 1942–45. There were 59 deaths from accidents of this type in 1946 and 42 in 1947. Other road transport accidents involving neither motor vehicles nor trams (No. 171b) caused annual averages of 608 deaths in 1935–38, 519 in 1939–41 and 458 in 1942–45.

Since then the number has been reduced still further, with 286 deaths in 1946 and 302 in 1947. Included in 171b are accidents involving a horse-drawn vehicle, wheel-chair, bicycle, or any other non-motor road vehicle.

Table CXXXIX.—Death Rates per million living from All Accidents caused by Road Motor Vehicles, by Sex and Age, 1925-27, 1928-30, 1931-33, 1934-36, and each year 1937 to 1947.*

Ages (l.b.d.)	1925-1927	1928-1930	1931-1933	1934-1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
	MALES														
0–... ...	107	142	143	135	111	137	116	146	181	160	113	126	140	119	95
5–... ...	195	250	242	204	185	190	197	197	268	261	238	268	241	173	183
10–... ...	102	132	106	105	91	110	108	116	139	102	96	118	109	109	75
15–... ...	151	231	238	217	188	198	200	200	223	137	111	112	137	170	129
20–... ...	233	365	393	386	404	384	360	325	340	218	134	129	213	232	220
35–... ...	146	221	228	209	202	219	241	210	266	180	128	133	131	129	132
25–... ...	112	147	142	144	147	140	180	182	203	140	116	124	95	102	102
45–... ...	134	166	160	170	159	153	231	224	239	175	136	129	105	100	112
55–... ...	170	239	228	220	224	228	367	364	367	239	187	202	146	161	147
65–... ...	301	400	395	358	364	363	582	552	529	393	275	322	261	240	246
75 and over	490	738	711	672	628	615	1,074	946	863	628	447	492	406	498	460
All ages ...	**159**	**226**	**225**	**214**	**207**	**211**	**263**	**253**	**278**	**204**	**159**	**174**	**154**	**150**	**144**
	FEMALES														
0–... ...	55	87	88	83	70	73	68	82	114	96	76	91	78	63	57
5–... ...	92	129	133	112	92	86	88	101	149	117	96	133	114	81	88
10–... ...	26	40	37	35	36	34	36	36	51	32	36	49	41	30	26
15–... ...	32	50	52	61	64	52	58	55	55	34	33	36	34	36	35
20–... ...	30	57	55	54	68	40	55	46	50	42	28	30	25	25	24
25–... ...	22	31	33	33	29	30	34	32	38	33	21	27	22	21	17
35–... ...	23	33	33	27	31	24	32	30	34	29	21	24	21	20	22
45–... ...	36	57	53	47	51	43	48	49	55	38	30	33	30	27	33
55–... ...	75	95	104	86	88	85	100	80	90	58	46	55	55	56	54
65–... ...	140	190	186	185	176	181	211	151	151	116	83	100	89	100	100
75 and over	179	276	260	297	296	325	335	238	226	170	154	160	158	185	177
All ages ...	**48**	**71**	**72**	**69**	**69**	**64**	**73**	**64**	**74**	**56**	**45**	**54**	**49**	**47**	**46**

* Excluding non-civilians after 3rd September, 1939, for males, and after 1st June, 1941, for females.
The figures for years before 1940 include all tramway accidents; those for 1940 onwards include only tramway accidents in which a motor vehicle was involved. The all ages rates for 1937, 1938 and 1939 comparable with those for 1940 onwards are 204, 208 and 258 for males and 68, 63 and 72 for females.

Table CXXXIX gives civilian death rates by sex and age due to motor vehicle accidents from 1925 to 1947. Comparability between rates for 1940–47 and previous years has been slightly disturbed by changes of definition (see footnote to the table), but the effect of these changes is not sufficient to invalidate the general trends and no corrections have been attempted in the table. A discussion of the trends up to 1945 was given in the Review for 1940–45, Text (page 247). Compared with 1945 there was a decline during 1946 and 1947 in mortality at ages under 15 in both sexes, and the rate for boys in 1947 was the lowest recorded throughout the whole period since 1925. At ages between 15 and 75 the rates in 1946 and 1947 were much the same as in 1945, but there was a small increase among those aged 75 and over. All the adult death rates were much lower than before the 1939–45 war. Death rates at different ages in 1947 are expressed below in terms of those in 1938 taken as a hundred.

Sex	All ages	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over
Males	68	69	96	68	65	57	60	73	73	64	68	75
Females	72	78	102	76	67	60	57	92	77	64	55	54

Table CXL gives the annual numbers of deaths from road accidents between 1940 and 1947 according to the types of vehicles involved and whether the deceased was a pedestrian, pedal cyclist, motor cyclist, occupant of a motor vehicle or occupant of a non-motor vehicle. This table includes deaths of non-civilians. The percentage distributions of deaths in 1937–38, 1944–45 and 1946–47 according to the person killed compare as follows :—

	Males			Females		
	1937–38	1944–45	1946–47	1937–38	1944–45	1946–47
Pedestrians	41	49	43	69	71	68
Pedal cyclists	23	20	18	12	15	10
Motor cyclists	22	12	20	6	1	5
Occupants of motor vehicles ...	14	18	17	13	12	16
Occupants of non-motor vehicles, others, and not stated...		1	2		1	1
Total number of deaths ...	**8,916**	**7,358**	**6,723**	**2,987**	**2,552**	**2,230**

Table CXL.—Deaths, including those of non-civilians, caused by Road Accidents involving Various Types of Vehicles, 1940 to 1947.

Int. List No.	Nature of Accident	Sex	1940	1941	1942	1943	1944	1945	1946	1947
170c (part)	*Motor vehicle accident causing death of pedestrian by:—*									
	Motor cycle	M.	161	151	134	70	72	48	104	92
		F.	56	83	54	34	44	38	48	54
	Motor goods vehicle	M.	955	1,100	950	792	956	703	517	507
		F.	397	500	439	386	481	355	251	265
	Motor bus, trolley bus	M.	677	728	587	466	437	287	248	239
		F.	193	223	225	187	194	157	150	136
	Motor car, coach	M.	1,124	1,062	488	355	390	398	515	481
		F.	352	343	158	136	178	211	256	255
	Other road motor vehicle (including collision unspecified)	M.	46	57	31	35	50	18	20	20
		F.	15	8	18	13	14	12	9	2
170c (part)	*Motor vehicle non-collision accident causing death of occupant or rider of :—*									
	Motor cycle	M.	283	316	244	155	129	145	287	253
		F.	19	15	14	—	4	8	19	24
	Motor goods vehicle	M.	240	338	308	282	289	224	187	131
		F.	8	16	24	13	15	23	11	12
	Motor bus, trolley bus	M.	60	85	67	80	43	56	43	38
		F.	26	57	58	40	47	59	32	38
	Motor car, coach	M.	135	132	69	65	49	101	110	133
		F.	54	49	27	16	14	37	55	57
	Other road motor vehicles	M.	4	12	5	14	12	8	9	7
		F.	1	—	—	3	7	3	2	2
170a	*Collision between motor vehicle and train, causing death of :—*									
	Motor cyclist	M.	—	1	—	—	1	—	3	—
		F.	—	—	—	—	—	—	—	—
	Occupant of motor vehicle	M.	4	17	6	21	10	20	5	19
		F	—	1	—	4	1	1	—	2
	Passenger or other person	M.	—	4	—	—	—	2	1	—
		F.	1	1	—	—	—	—	—	—
170b	*Collision between motor vehicle and tramcar, causing death of :—*									
	Motor cyclist	M.	1	3	2	1	1	—	—	—
		F.	—	—	—	—	—	—	—	—
	Occupant of motor vehicle	M.	1	1	4	2	3	—	—	—
		F.	—	1	—	—	2	—	—	1
	Tram passenger or other person ...	M.	—	1	—	—	1	—	1	—
		F.	—	—	—	—	—	—	—	—

Table CXL.—(*contd.*)

Int. List No.	Nature of Accident	Sex	1940	1941	1942	1943	1944	1945	1946	1947
170c (part)	*Other collision involving a motor vehicle, causing death of :—*									
	Pedal cyclist by—									
	Motor cycle	M.	35	33	34	20	20	14	20	13
		F.	2	5	2	1	3	2	5	1
	Motor goods vehicle	M.	340	326	280	238	324	229	200	187
		F.	70	87	68	75	105	56	42	30
	Motor bus, trolley bus	M.	95	104	86	83	69	69	56	61
		F.	14	18	20	11	19	17	12	9
	Motor car, coach	M.	274	262	161	100	129	153	200	154
		F.	59	59	39	34	40	29	37	40
	Other road motor vehicle	M.	8	9	6	7	20	10	5	2
		F.	—	1	1	1	4	3	1	1
	Motor cyclist	M.	811	883	512	272	306	286	391	443
		F.	23	37	19	13	8	17	27	38
	Occupant of—									
	Motor goods vehicle	M.	139	185	130	120	147	105	68	74
		F.	9	15	10	8	11	8	5	1
	Motor bus, trolley bus	M.	15	23	14	10	7	8	7	10
		F.	9	4	13	5	3	3	2	6
	Motor car, coach	M.	217	257	110	62	88	121	130	137
		F.	86	84	46	13	25	52	69	61
	Other road motor vehicle	M.	3	2	4	2	3	4	5	9
		F.	—	—	2	—	—	2	—	—
	Non-motor road vehicle (except tramcar, pedal cycle)	M.	14	17	9	5	9	11	5	12
		F.	1	4	3	1	3	—	2	1
170c (part)	*Ill-defined motor vehicle accident causing death of :—*									
	Other or unspecified person*... ...	M.	—	—	—	—	9	17	21	13
		F.	—	—	—	—	—	1	—	—
	TOTAL motor road vehicle fatalities ...	**M.**	**5,642**	**6,109**	**4,241**	**3,257**	**3,574**	**3,037**	**3,158**	**3,035**
		F.	**1,395**	**1,611**	**1,240**	**994**	**1,222**	**1,094**	**1,035**	**1,036**
171	*Road transport accidents involving only non-motor vehicle(s), causing death of :—*									
	Pedestrian by—									
	Tramcar	M.	120	94	67	70	51	33	19	17
		F.	28	29	26	32	24	21	22	12
	Pedal cycle	M.	109	79	67	68	57	34	41	45
		F.	55	46	28	39	26	30	14	33
	Other non-motor vehicle	M.	27	48	45	40	48	28	22	15
		F.	2	8	11	11	7	13	6	5
	Pedal cyclist by—									
	No other vehicle	M.	245	222	222	242	208	168	141	143
		F.	42	33	53	63	37	39	27	24
	Tramcar	M.	2	—	—	2	1	—	2	3
		F.	1	—	—	—	—	1	1	—
	Other non-motor vehicle	M.	15	15	21	15	21	14	16	14
		F.	3	3	4	7	8	8	2	1
	Occupant of tramcar	M.	15	18	14	13	7	9	10	7
		F.	5	9	3	13	7	7	5	3
	Occupant of other non-motor vehicle	M.	31	30	41	37	35	33	14	21
		F.	2	3	4	3	5	3	3	1
	TOTAL non-motor road vehicle fatalities	**M.**	**564**	**506**	**477**	**487**	**428**	**319**	**265**	**265**
		F.	**138**	**131**	**129**	**168**	**114**	**122**	**80**	**79**
170 and 171	Total pedestrians	M.	3,219	3,319	2,369	1,896	2,061	1,549	1,486	1,416
		F.	1,098	1,241	959	838	968	837	756	762
	Total pedal cyclists	M.	1,014	971	810	707	792	657	640	577
		F.	191	206	187	192	216	155	127	106
	Total motor cyclists	M.	1,095	1,203	758	428	437	431	681	696
		F.	42	52	33	13	12	25	46	62
	Total occupants of motor vehicles (except cycles)	M.	818	1,052	717	658	651	647	564	558
		F.	193	227	180	102	125	188	176	180
	Total occupants of non-motor vehicles	M.	60	70	64	55	52	54	30	40
		F.	9	16	10	17	15	10	10	5
	Total other or unspecified persons ...	M.	—	—	—	—	9	18	22	13
		F.	—	—	—	—	—	1	—	—

Notes

(1) " Motor goods vehicle " includes road motor vehicles not primarily used for conveying people, *e.g.*, van, lorry, tractor, fire-engine.

(2) " Motor car, coach " includes taxi-cab, motor car unspecified.

(3) " Other road motor vehicle " includes vehicles used for conveying people which are not included in the other motor vehicle categories of this table, *e.g.*, ambulance, motor hearse, invalid carriage. It also includes motor vehicle unspecified.

(4) " Other non-motor vehicle " includes animal drawn vehicle, wheel chair, non-motor vehicle unspecified and vehicle unspecified.

* This category was not used until 1944. Before this date such deaths were assigned to other categories in this table according to the limited information available.

In both sexes the proportion of pedestrians killed, which rose during the war years, returned in 1946–47 to its pre-war level. The proportion of pedal cyclists was lower in 1946–47 than before or during the war, while motor cyclists, who accounted for a much lower proportion of all fatal accidents during the war, showed an increase again in 1946–47. Compared with 1944–45, the percentage of deaths of male occupants of motor vehicles declined slightly, while the corresponding female percentage increased.

The percentage distributions of deaths of pedestrians and of pedal cyclists in 1937–38, 1944–45 and 1946–47, according to the types of vehicle involved, are shown below :—

Vehicle involved	PERSONS KILLED					
	Pedestrians			Pedal cyclists		
	1937–38	1944–45	1946–47	1937–38	1944–45	1946–47
Motor cycle	7	4	7	3	2	3
Motor goods vehicle	28	46	35	25	39	31
Motor bus	10	20	17	0	10	10
Motor car, coach	46	22	34	40	19	30
Other motor vehicles	1	2	1	8	2	1
Tramcar	8	2	2	24	0	0
Pedal cycle (only)		3	3		25	23
Other non-motor vehicles ...		2	1		3	2
Total deaths	**5,680**	**5,415**	**4,420**	**2,430**	**1,820**	**1,450**

Of the pedestrian deaths in 1946–47, 35 per cent. were caused by motor goods vehicles and 17 per cent. by motor bus, each of these being higher than the pre-war proportions but lower than during the war. On the other hand the proportion of pedestrian deaths caused by motor cars and motor coaches (34 per cent.) although higher than in 1944–45 was still well below the pre-war level, when almost half of the fatalities occurring to pedestrians on the roads were caused by motor cars.

In about a quarter of the road accidents where a pedal cyclist was killed no other vehicle was involved, and this proportion was the same in 1944–47 as before the war. Fatal collisions with motor goods vehicles and with buses were relatively more frequent than in 1937–38, while accidents in which a motor car was implicated were less frequent. The variations from period to period in respect of pedal cyclist fatalities were similar, therefore, to the variations for pedestrians.

Analysis of the deaths of motor cyclists in the same three periods gives the following percentages :—

Vehicles involved	MOTOR CYCLISTS		
	1937–38	1944–45	1946–47
Motor cycle alone	39	32	40
Other motor cycle		3	3
Motor goods vehicle	20	41	24
Motor bus	5	6	6
Motor car, coach	32	15	26
Other road motor vehicle	?	1	0
Tram car	?	0	—
Pedal cycle	2	2	1
Other non-motor vehicles	?	0	0
Collision, vehicle unspecified	2	0	0
Total deaths	**2,160**	**905**	**1,485**

Deaths of motor cyclists in 1946–47 (1,482) were two-thirds as frequent as in 1937–38 (2,160). As in the case of pedestrians and pedal cyclists the proportion of motor cyclists killed in collision with motor cars was lower than in 1937–38 but higher than during the war years.

Deaths of occupants of motor and other vehicles numbered 1,564 in 1946–47 compared with 1,742 in 1944–45 and the percentage distribution of these deaths by type of vehicle was as follows :—

Vehicles involved		1944–45	1946–47
Motor bus	Not in collision	12	10
	In collision	1	2
Motor goods vehicle	Not in collision	32	22
	In collision	16	9
Motor car or coach	Not in collision	12	23
	In collision	16	25
Other motor vehicle on road		2	2
Tram or train in motor accident		2	2
Non-motor vehicle	In collision with motor vehicle	1	1
	In other accident	6	4
Total deaths		**1,742**	**1,564**

Tables CXLIa and b analyse the deaths from road transport accidents in 1946 and 1947 separately, according to whether the deceased was a pedestrian, pedal or motor cyclist, occupant of a motor or other vehicle; whether, in the case of civilians, resident in Greater London, a county borough, urban or rural district, whether the accident resulted from collision or not and the types of road vehicles involved. The last section of each table gives the deaths of non-civilians without allocation to area of residence. Comparable analyses were made for the years 1936, 1937, 1938, 1939, 1940–42 and 1943–45, and will be found in the Text volumes dealing with those years. Comparison is made below between the distribution of deaths of civilian and non-civilian males in 1946 and 1947, distinguishing between fatal accidents to pedestrians and to occupants of vehicles not in collision with other vehicles.

	1946			1947		
	No. of deaths		Per cent. of non-civilians	No. of deaths		Per cent. of non-civilians
	Civilian males	Non-civilian males		Civilian males	Non-civilian males	
Pedestrians by :						
Motor cycle	103	1	1·0	88	4	4·3
Motor goods vehicle ...	488	29	5·6	495	12	2·4
Motor bus	243	5	2·0	236	3	1·3
Motor car, coach	491	24	4·7	466	15	3·1
Other motor vehicle ...	17	3	15·0	19	1	5·0
Total	**1,342**	**62**	**4.4**	**1,304**	**35**	**2.6**
Occupants in non-collision accidents :						
Motor cycle	237	50	17·4	220	33	13·0
Motor goods vehicle ...	111	76	40·6	109	22	16·8
Motor bus	41	2	4·7	38	—	—
Motor car, coach	83	27	24·5	124	9	6·8
Other motor vehicle ...	3	6	66·7	2	5	71·4
Total	**475**	**161**	**25·3**	**493**	**69**	**12·3**

Table CXLIa.—Deaths of Pedestrians, Pedal Cyclists, Motor Cyclists and Occupants of Vehicles in Road Transport Accidents, according to sex, class of area of residence and vehicle involved. 1946.

Area of residence and type of vehicle and accident	Pedestrian		Pedal cyclists		Motor cyclists		Occupants of road motor vehicles†		Occupants of non-motor vehicles‡		Other or unspecified persons		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
England and Wales (civilians)														
Motor vehicle, non-collision‖														
Motor cycle	103	48	—	—	237	19	—	—	—	—	—	—	340	67
Motor goods vehicle	488	251	—	—	—	—	111	7	—	—	—	—	599	258
Motor bus, trolley bus	243	150	—	—	—	—	41	32	—	—	—	—	284	182
Motor car, coach	491	255	—	—	—	—	83	54	—	—	—	—	574	309
Other road motor vehicle	17	9	—	—	—	—	3	2	—	—	—	—	20	11
*Collision involving motor vehicle**														
With train	—	—	—	—	3	—	5	—	—	—	1	—	9	—
With tram	—	—	—	—	—	—	—	—	1	—	—	—	1	—
Motor cycle	§	§	20	5	21	1	—	—	—	—	—	—	41	6
Motor goods vehicle	§	§	192	42	119	10	37	5	4	1	—	—	352	58
Motor bus, trolley bus	§	§	55	12	35	5	7	2	1	1	—	—	98	20
Motor car, coach	§	§	189	37	144	10	117	68	—	—	—	—	450	115
Other road motor vehicle	§	§	5	1	2	—	5	—	—	—	—	—	12	1
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	20	—	20	—
Non-motor vehicle(s) only														
Tram	19	22	2	1	—	—	—	—	9	5	—	—	30	28
Pedal cycle	41	14	133	26	—	—	—	—	—	—	—	—	174	40
Other non-motor vehicle	22	6	15	2	—	—	—	—	14	3	—	—	51	11
Total	**1,424**	**755**	**611**	**126**	**561**	**45**	**409**	**170**	**29**	**10**	**21**	—	**3,055**	**1,106**
Greater London residents														
Motor vehicle, non collision‖														
Motor cycle	15	13	—	—	29	3	—	—	—	—	—	—	44	16
Motor goods vehicle	88	55	—	—	—	—	14	—	—	—	—	—	102	55
Motor bus, trolley bus	48	35	—	—	—	—	7	5	—	—	—	—	55	40
Motor car, coach	97	58	—	—	—	—	21	8	—	—	—	—	118	66
Other road motor vehicle	2	2	—	—	—	—	1	—	—	—	—	—	3	2
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	5	—	3	—	—	—	—	—	—	—	8	—
Motor goods vehicle	§	§	39	4	15	2	2	—	—	—	—	—	56	6
Motor bus, trolley bus	§	§	14	2	3	3	2	—	—	—	—	—	19	5
Motor car, coach	§	§	29	3	17	—	18	15	—	—	—	—	64	18
Other road motor vehicle	§	§	—	1	—	—	—	—	—	—	—	—	—	1
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	5	—	5	—
Non-motor vehicle(s) only														
Tram	4	10	—	—	—	—	—	—	2	1	—	—	6	11
Pedal cycle	6	2	11	2	—	—	—	—	—	—	—	—	17	4
Other non-motor vehicle	5	—	2	—	—	—	—	—	1	1	—	—	8	1
Total	**265**	**175**	**100**	**12**	**67**	**8**	**65**	**28**	**3**	**2**	**5**	—	**505**	**225**
County Borough residents¶														
Motor vehicle, non-collision‖														
Motor cycle	32	18	—	—	64	9	—	—	—	—	—	—	96	27
Motor goods vehicle	141	90	—	—	—	—	34	1	—	—	—	—	175	91
Motor bus, trolley bus	114	63	—	—	—	—	11	10	—	—	—	—	125	73
Motor car, coach	169	89	—	—	—	—	10	15	—	—	—	—	179	104
Other road motor vehicle	4	2	—	—	—	—	—	—	—	—	—	—	4	2
*Collisions involving motor vehicle**														
With train	—	—	—	—	1	—	1	—	—	—	—	—	2	—
With tram	—	—	—	—	—	—	—	—	1	—	—	—	1	—
Motor cycle	§	§	4	—	4	—	—	—	—	—	—	—	8	—
Motor goods vehicle	§	§	54	16	26	5	15	1	2	—	—	—	97	22
Motor bus, trolley bus	§	§	21	4	10	2	4	1	—	—	—	—	35	7
Motor car, coach	§	§	38	9	31	3	27	23	—	—	—	—	96	35
Other road motor vehicle	§	§	—	—	—	—	1	—	—	—	—	—	1	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	3	—	3	—
Non-motor vehicle(s) only														
Tram	9	11	1	1	—	—	—	—	6	4	—	—	16	16
Pedal cycle	12	5	16	2	—	—	—	—	—	—	—	—	28	7
Other non-motor vehicle	9	1	4	—	—	—	—	—	6	—	—	—	19	1
Total	**490**	**279**	**138**	**32**	**136**	**19**	**103**	**51**	**15**	**4**	**3**	—	**885**	**385**

Table CXLIa.—(*contd.*)

Area of residence and type of vehicle and accident	Pedestrian		Pedal cyclists		Motor cyclists		Occupants of road motor vehicles†		Occupants of non-motor vehicles‡		Other or unspecified persons		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Urban District residents¶														
Motor vehicle, non-collision‖														
Motor cycle	23	13	—	—	67	3	—	—	—	—	—	—	90	16
Motor goods vehicle	163	56	—	—	—	—	40	2	—	—	—	—	203	58
Motor bus, trolley bus	54	42	—	—	—	—	12	12	—	—	—	—	66	54
Motor car, coach	131	70	—	—	—	—	23	15	—	—	—	—	154	85
Other road motor vehicle	3	5	—	—	—	—	1	1	—	—	—	—	4	6
*Collisions involving motor vehicle**														
With train	—	—	—	—	1	—	1	—	—	—	1	—	3	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	5	2	8	1	—	—	—	—	—	—	13	3
Motor goods vehicle	§	§	51	17	36	—	11	1	1	—	—	—	99	18
Motor bus, trolley bus	§	§	15	3	13	—	1	1	—	1	—	—	29	5
Motor car, coach	§	§	47	14	49	6	34	15	—	—	—	—	130	35
Other road motor vehicle	§	§	2	—	1	—	3	—	—	—	—	—	6	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	10	—	10	—
Non-motor vehicle(s) only														
Tram	6	—	1	—	—	—	—	—	—	—	—	—	7	—
Pedal cycle	11	4	44	9	—	—	—	—	—	—	—	—	55	13
Other non-motor vehicle	6	5	3	2	—	—	—	—	1	1	—	—	10	8
Total	**397**	**195**	**168**	**47**	**175**	**10**	**126**	**47**	**2**	**2**	**11**	**—**	**879**	**301**
Rural district residents¶														
Motor vehicle, non-collision‖														
Motor cycle	33	4	—	—	77	4	—	—	—	—	—	—	110	8
Motor goods vehicle	96	50	—	—	—	—	23	4	—	—	—	—	119	54
Motor bus, trolley bus	27	10	—	—	—	—	11	5	—	—	—	—	38	15
Motor car, coach	94	38	—	—	—	—	29	16	—	—	—	—	123	54
Other road motor vehicle	8	—	—	—	—	—	1	1	—	—	—	—	9	1
*Collisions involving motor vehicle**														
With train	—	—	—	—	1	—	3	—	—	—	—	—	4	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	6	3	6	—	—	—	—	—	—	—	12	3
Motor goods vehicle	§	§	48	5	42	3	9	3	1	1	—	—	100	12
Motor bus, trolley bus	§	§	5	3	9	—	—	—	1	—	—	—	15	3
Motor car, coach	§	§	75	11	47	1	38	15	—	—	—	—	160	27
Other road motor vehicle	§	§	3	—	1	—	1	—	—	—	—	—	5	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	2	—	2	—
Non-motor vehicle(s) only														
Tram	—	1	—	—	—	—	—	—	1	—	—	—	1	1
Pedal cycle	12	3	62	13	—	—	—	—	—	—	—	—	74	16
Other non-motor vehicle	2	—	6	—	—	—	—	—	6	1	—	—	14	1
Total	**272**	**106**	**205**	**35**	**183**	**8**	**115**	**44**	**9**	**2**	**2**	**—**	**786**	**195**
England and Wales (non-civilians)														
Motor vehicle, non-collision‖														
Motor cycle	1	—	—	—	50	—	—	—	—	—	—	—	51	—
Motor goods vehicle	29	—	—	—	—	—	76	4	—	—	—	—	105	4
Motor bus, trolley bus	5	—	—	—	—	—	2	—	—	—	—	—	7	—
Motor car, coach	24	1	—	—	—	—	27	1	—	—	—	—	51	2
Other road motor vehicle	3	—	—	—	—	—	6	—	—	—	—	—	9	—
*Collisions involving motor vehicle**														
With train	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	—	—	3	—	—	—	—	—	—	—	3	—
Motor goods vehicle	§	§	8	—	32	—	31	—	—	—	—	—	71	—
Motor bus, trolley bus	§	§	1	—	6	—	—	—	—	—	—	—	7	—
Motor car, coach	§	§	11	—	27	1	13	1	—	—	—	—	51	2
Other road motor vehicle	§	§	—	—	2	—	—	—	—	—	—	—	2	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	1	—	1	—
Non-motor vehicle(s) only														
Tram	—	—	—	—	—	—	—	—	1	—	—	—	1	—
Pedal cycle	—	—	8	1	—	—	—	—	—	—	—	—	8	1
Other non-motor vehicle	—	—	1	—	—	—	—	—	—	—	—	—	1	—
Total	**62**	**1**	**29**	**1**	**120**	**1**	**155**	**6**	**1**	**—**	**1**	**—**	**368**	**9**

* No death is entered in more than one of these categories. Collisions of any motor vehicle with a train or tram are entered in the first two categories; collisions with other type of non-motor vehicle are in the last five categories; deaths of pedal cyclists and motor-cyclists in collision with more than one other motor vehicle appear against the vehicle at fault in the collision.

† Except motor cyclists.

‡ Except pedal cyclists.

§ Included above under "non-collision."

‖ Includes a few deaths of pedestrians resulting from collisions.

¶ Outside Greater London.

See definitions under Table CXL.

Table CXLIb.—Deaths of Pedestrians, Pedal Cyclists, Motor Cyclists and Occupants of Vehicles in Road Transport Accidents, according to sex, class of area of residence and vehicle involved. 1947.

Area of residence and type of vehicle and accident	Pedestrian		Pedal cyclists		Motor cyclists		Occupants of road motor vehicles†		Occupants of non-motor vehicles‡		Other or unspecified persons		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
England and Wales (civilians)														
Motor vehicle, non-collision‖														
Motor cycle	88	54	—	—	220	24	—	—	—	—	—	—	308	78
Motor goods vehicle	495	264	—	—	—	—	109	12	—	—	—	—	604	276
Motor bus, trolley bus	236	136	—	—	—	—	38	38	—	—	—	—	274	174
Motor car, coach	466	255	—	—	—	—	124	53	—	—	—	—	590	308
Other road motor vehicle	19	2	—	—	—	—	2	2	—	—	—	—	21	4
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	6	2	—	—	—	—	6	2
With tram	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Motor cycle	§	§	12	1	42	6	—	—	1	—	—	—	55	7
Motor goods vehicle	§	§	184	30	153	8	52	1	7	—	—	—	396	39
Motor bus, trolley bus	§	§	60	9	39	5	10	6	3	1	—	—	112	21
Motor car, coach	§	§	147	40	156	19	130	61	1	—	—	—	434	120
Other road motor vehicle	§	§	2	1	3	—	2	—	—	—	—	—	7	1
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	13	—	13	—
Non-motor vehicle(s) only														
Tram	17	12	3	—	—	—	—	—	7	3	—	—	27	15
Pedal cycle	45	33	135	24	—	—	—	—	—	—	—	—	180	57
Other non-motor vehicle	15	5	14	1	—	—	—	—	21	1	—	—	50	7
Total	**1,381**	**761**	**557**	**106**	**613**	**62**	**473**	**176**	**40**	**5**	**13**	**—**	**3,077**	**1,110**
Greater London residents														
Motor vehicle, non-collision‖														
Motor cycle	22	13	—	—	24	4	—	—	—	—	—	—	46	17
Motor goods vehicle	86	56	—	—	—	—	14	1	—	—	—	—	100	57
Motor bus, trolley bus	41	28	—	—	—	—	4	6	—	—	—	—	45	34
Motor car, coach	102	70	—	—	—	—	21	4	—	—	—	—	123	74
Other road motor vehicle	3	—	—	—	—	—	—	—	—	—	—	—	3	—
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With tram	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Motor cycle	§	§	1	—	6	1	—	—	—	—	—	—	7	1
Motor goods vehicle	§	§	31	5	28	1	5	—	—	—	—	—	64	6
Motor bus, trolley bus	§	§	13	2	4	2	1	1	—	1	—	—	18	6
Motor car, coach	§	§	27	8	25	3	22	10	—	—	—	—	74	21
Other road motor vehicle	§	§	—	—	—	—	—	—	—	—	—	—	—	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	3	—	3	—
Non-motor vehicle(s) only														
Tram	5	2	—	—	—	—	—	—	1	—	—	—	6	2
Pedal cycle	5	3	9	4	—	—	—	—	—	—	—	—	14	7
Other non-motor vehicle	6	—	3	—	—	—	—	—	6	—	—	—	15	—
Total	**270**	**172**	**84**	**19**	**87**	**11**	**67**	**23**	**7**	**1**	**3**	**—**	**518**	**226**
County borough residents¶														
Motor vehicle, non-collision‖														
Motor cycle	22	13	—	—	43	6	—	—	—	—	—	—	65	19
Motor goods vehicle	164	87	—	—	—	—	30	1	—	—	—	—	194	88
Motor bus, trolley bus	105	59	—	—	—	—	11	11	—	—	—	—	116	70
Motor car, coach	137	77	—	—	—	—	26	13	—	—	—	—	163	90
Other road motor vehicle	5	1	—	—	—	—	—	—	—	—	—	—	5	1
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	3	—	—	—	—	—	3	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	3	—	9	2	—	—	—	—	—	—	12	2
Motor goods vehicle	§	§	54	2	27	2	16	1	2	—	—	—	99	5
Motor bus, trolley bus	§	§	30	5	14	2	4	4	2	—	—	—	50	11
Motor car, coach	§	§	39	5	38	8	24	16	1	—	—	—	102	29
Other road motor vehicle	§	§	—	1	1	—	2	—	—	—	—	—	3	1
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	2	—	2	—
Non-motor vehicle(s) only														
Tram	11	10	3	—	—	—	—	—	2	3	—	—	16	13
Pedal cycle	13	11	25	4	—	—	—	—	—	—	—	—	38	15
Other non-motor vehicle	6	3	5	—	—	—	—	—	6	—	—	—	17	3
Total	**463**	**261**	**159**	**17**	**132**	**20**	**116**	**46**	**13**	**3**	**2**	**—**	**885**	**347**

Table CXLIb. (*contd.*)

Area of residence and type of vehicle and accident	Pedestrian		Pedal cyclists		Motor cyclists		Occupants of road motor vehicles†		Occupants of non-motor vehicles‡		Other or unspecified persons		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Urban district residents¶														
Motor vehicle, non-collision‖														
Motor cycle	30	18	—	—	66	8	—	—	—	—	—	—	96	26
Motor goods vehicle	144	81	—	—	—	—	43	3	—	—	—	—	187	84
Motor bus, trolley bus	67	34	—	—	—	—	12	11	—	—	—	—	79	45
Motor car, coach	124	65	—	—	—	—	45	22	—	—	—	—	169	87
Other road motor vehicle	8	—	—	—	—	—	1	1	—	—	—	—	9	1
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	1	2	—	—	—	—	1	2
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	6	1	15	1	—	—	—	—	—	—	21	2
Motor goods vehicle	§	§	46	13	40	4	16	—	5	—	—	—	107	17
Motor bus, trolley bus	§	§	8	2	13	1	3	—	1	—	—	—	25	3
Motor car, coach	§	§	30	13	40	4	44	23	—	—	—	—	114	40
Other road motor vehicle	§	§	1	—	1	—	—	—	—	—	—	—	2	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	3	—	3	—
Non-motor vehicle(s) only														
Tram	1	—	—	—	—	—	—	—	2	—	—	—	3	—
Pedal cycle	16	15	40	5	—	—	—	—	—	—	—	—	56	20
Other non-motor vehicle	2	1	3	1	—	—	—	—	3	—	—	—	8	2
Total	**392**	**214**	**134**	**35**	**175**	**18**	**165**	**62**	**11**	—	**3**	—	**880**	**329**
Rural district residents¶														
Motor vehicle, non-collision‖														
Motor cycle	14	10	—	—	87	6	—	—	—	—	—	—	101	16
Motor goods vehicle	101	40	—	—	—	—	22	7	—	—	—	—	123	47
Motor bus, trolley bus	23	15	—	—	—	—	11	10	—	—	—	—	34	25
Motor car, coach	103	43	—	—	—	—	32	14	—	—	—	—	135	57
Other road motor vehicle	3	1	—	—	—	—	1	1	—	—	—	—	4	2
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	2	—	—	—	—	—	2	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	2	—	12	2	—	—	1	—	—	—	15	2
Motor goods vehicle	§	§	53	10	58	1	15	—	—	—	—	—	126	11
Motor bus, trolley bus	§	§	9	—	8	—	2	1	—	—	—	—	19	1
Motor car, coach	§	§	51	14	53	4	40	12	—	—	—	—	144	30
Other road motor vehicle	§	§	1	—	1	—	—	—	—	—	—	—	2	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	5	—	5	—
Non-motor vehicle(s) only														
Tram	—	—	—	—	—	—	—	—	2	—	—	—	2	—
Pedal cycle	11	4	61	11	—	—	—	—	—	—	—	—	72	15
Other non-motor vehicle	1	1	3	—	—	—	—	—	6	1	—	—	10	2
Total	**256**	**114**	**180**	**35**	**219**	**13**	**125**	**45**	**9**	**1**	**5**	—	**794**	**208**
England and Wales (non-civilians)														
Motor vehicle, non-collision‖														
Motor cycle	4	—	—	—	33	—	—	—	—	—	—	—	37	—
Motor goods vehicle	12	1	—	—	—	—	22	—	—	—	—	—	34	1
Motor bus, trolley bus	3	—	—	—	—	—	—	—	—	—	—	—	3	—
Motor car, coach	15	—	—	—	—	—	9	4	—	—	—	—	24	4
Other road motor vehicle	1	—	—	—	—	—	5	—	—	—	—	—	6	—
*Collision involving motor vehicle**														
With train	—	—	—	—	—	—	13	—	—	—	—	—	13	—
With tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Motor cycle	§	§	1	—	2	—	—	—	—	—	—	—	3	—
Motor goods vehicle	§	§	3	—	21	—	22	—	—	—	—	—	46	—
Motor bus, trolley bus	§	§	1	—	6	—	—	—	—	—	—	—	7	—
Motor car, coach	§	§	7	—	20	—	7	—	—	—	—	—	34	—
Other road motor vehicle	§	§	—	—	1	—	7	—	—	—	—	—	8	—
Ill-defined motor vehicle accident	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Non-motor vehicle(s) only														
Tram	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pedal cycle	—	—	8	—	—	—	—	—	—	—	—	—	8	—
Other non-motor vehicle	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	**35**	**1**	**20**	—	**83**	—	**85**	**4**	—	—	—	—	**223**	**5**

* No death is entered in more than one of these categories. Collisions of any motor vehicle with a train or tram are entered in the first two categories; collisions with other type of non-motor vehicle are in the last five categories; deaths of pedal cyclists and motor cyclists in collision with more than one other motor vehicle appear against the vehicle at fault in the collision.

† Except motor cyclists.

‡ Except pedal cyclists.

§ Included above under "non-collision."

‖ Includes a few deaths of pedestrians resulting from collision.

¶ Outside Greater London.

See definitions under Table CXL.

In 1946, 4·4 per cent. of male pedestrians killed in accidents were non-civilians and in 1947, 2·6 per cent. On the other hand, of the occupants of vehicles not involved in collision 25·3 per cent. were non-civilians in 1946 and 12·3 per cent. in 1947. The reduction in the non-civilian proportions in the latter year are, of course, attributable to the smaller proportion of non-civilians in the population. In both years, however, the proportion of non-civilians killed as occupants of vehicles was far in excess of their numbers in the total population.

Regional variations in the death rates from road traffic accidents in 1947 are shown in Table CXLII for four separate age groups, the allocation to regions depending upon the place of residence of the deceased.

For England and Wales as a whole the male death rate was 119 per million at 0–14, 140 at 15–44 and 142 at 45–64, and then rose sharply to 339 at 65 and over. The female rates were 58 at 0–14, 24 at 15–44, 46 at 45–64 and 137 at 65. Although the relationship with age amongst females was repeated in practically all the regions and classes of area, that for males differed considerably in different areas. Thus in county boroughs the male rate at 0–14 exceeded that at 15–44, in other urban districts the rates at 0–14 and 15–44 exceeded those at 45–64 and at 65 and over, and in the rural districts the rate at 15–44 was higher than at 45–64.

At ages 0–14 the region with the highest death rate for boys was North I and for girls North II. The lowest rate for boys occurred in the East and for girls in Wales II. At 15–44 both the male rate and the female rate were highest in the South West, the former being lowest in Greater London and the latter in Midland II. At 45–64 the rate for males was highest in Midland II and for females in the East, while the lowest rates for each sex were in North I, equalled for females in Wales II. At 65 and over Greater London had the highest death rates both for men and women, while the lowest rates were in Wales II for males and in the East for females.

Table CXLII.—Road Traffic Accidents : Death Rates per million living in Regions and different classes of Area by Sex and Age, 1947.

Area	0–		15–		45–		65 and over	
	Males	Females	Males	Females	Males	Females	Males	Females
England and Wales	**119**	**58**	**140**	**24**	**142**	**46**	**339**	**137**
Regional Summary :								
South East	101	47	121	25	142	44	369	157
Greater London	93	47	98	21	139	50	435	185
Remainder of South East	111	48	154	30	145	36	301	127
North	144	64	131	20	132	43	365	144
North I	182	63	111	24	96	11	296	150
North II	139	118	190	27	164	25	261	87
North III	133	50	148	22	133	54	352	100
North IV	137	59	116	16	138	51	422	178
Midland	126	71	172	24	149	50	357	110
Midland I	135	75	169	28	129	51	365	120
Midland II	107	63	179	15	185	48	344	92
East	73	43	153	36	181	64	218	61
South West	99	70	195	35	167	49	243	119
Wales	116	51	132	23	128	44	204	136
Wales I	126	60	131	25	134	59	215	137
Wales II	89	27	137	20	113	11	179	135
Density Summary :								
County Boroughs*	125	62	120	21	129	41	390	164
Other Urban Districts* ...	124	54	133	24	120	42	248	120
Rural Districts*	126	70	229	33	203	57	335	77

* Excluding Greater London.

These variations between the regions depend greatly upon the degree of urbanisation since there is a differential relationship between urbanisation and road traffic accidents at different ages. At ages 0–14 the male death rate was unaffected by urbanisation, but the female rate was higher in rural than in urban districts with county boroughs intermediate. At 15–44 and at 45–64 the male rates in rural districts were almost double those of towns. Female rates tended in the same direction but with much smaller differences. At ages 65 and over the male rate was highest in the county boroughs and lowest in other urban districts. Among elderly women the death rate was highest in the county boroughs and lowest in rural districts. Examination of these mortality gradients leads to two important conclusions, (*a*) that adult males are at exceptional risk if they live in rural districts and (*b*) elderly persons of both sexes are at exceptional risk if they live in large towns.

The following table, derived from Tables CXLIa and b compares the distribution in 1946–47 of deceased persons resident in county boroughs and in rural districts according to (*a*) whether they were pedestrians, cyclists or occupants of vehicles, and (*b*) the nature of the accident, non-collision, collision or solely due to a non-motor vehicle.

(*a*)		Pedestrians	Pedal cyclists	Motor cyclists	Occupants of road motor vehicles	Occupants of non-motor vehicles	Other and unspecified persons	Total
Males	County Boroughs							
	Number	953	297	268	219	28	5	1,770
	Percentage ...	*53·8*	*16·8*	*15·1*	*12·4*	*1·6*	*0·3*	*100*
	Rural Districts							
	Number ...	528	385	402	240	18	7	1,580
	Percentage ...	*33·5*	*24·4*	*25·4*	*15·2*	*1·1*	*0·4*	*100*
Females	County Boroughs							
	Number ...	540	49	39	97	7	—	732
	Percentage ...	*73·7*	*6·7*	*5·3*	*13·3*	*1·0*	—	*100*
	Rural Districts							
	Number ...	220	70	21	89	3	—	403
	Percentage ...	*54·6*	*17·4*	*5·2*	*22·1*	*0·7*	—	*100*

(*b*)		Motor vehicle non-collision	Collision involving motor vehicles	Ill-defined motor vehicle accident	Non-motor vehicles only	Total
Males	County Boroughs					
	Number	1,122	509	5	134	1,770
	Percentage ...	*63·4*	*28·8*	*0·3*	*7·5*	*100*
	Rural Districts					
	Number	796	604	7	173	1,580
	Percentage ...	*50·5*	*38·2*	*0·4*	*10·9*	*100*
Females	County Boroughs					
	Number	565	112	—	55	732
	Percentage ...	*77·2*	*15·3*	—	*7·5*	*100*
	Rural Districts					
	Number	279	89	—	35	403
	Percentage ...	*69·2*	*22·1*	—	*8·7*	*100*

173. Deaths caused by Air Transport. —The deaths of civilians resulting from air transport accidents are given in Table CXLIII. There were 16 deaths (seven occupational) from this cause in 1946 and 59 (25 occupational) in 1947. As in 1940–45 all deaths of non-civilians in 1946 were classified without distinction to No. 196, Operations of War. Such deaths were, however, distinguished in 1947 (Table 21A) and amounted to 95, all of males.

Table CXLIII.—Air Transport Accidents : Deaths by Sex and Age, excluding non-civilians after 3rd September, 1939 for Males, and after 1st June, 1941 for Females, 1931 to 1947.

Year	Males						Females						Persons, all ages
	0–	15–	25–	35–	45–	55 and over	0–	15–	25–	35–	45–	55 and over	
1931	—	37	25	6	1	1	—	1	—	3	—	—	74
1932	1	19	18	2	—	—	—	—	1	2	—	—	43
1933	2	19	23	3	—	—	—	—	2	—	—	—	49
1934	—	20	33	6	1	2	—	1	2	—	1	1	67
1935	—	27	21	7	—	1	—	2	3	—	—	—	61
1936	—	36	35	16	4	1	—	2	3	2	—	—	99
1937	1	99	46	18	4	3	—	1	2	1	—	—	175
1938	4	98	66	12	4	3	—	3	2	2	—	—	194
1939	—	102	69	18	—	1	2	1	1	2	—	1	197
1940	—	5	9	9	4	—	1	1	1	1	—	—	31
1941	—	1	1	3	1	—	—	—	—	—	—	1	7
1942	—	2	4	—	—	1	—	—	—	—	—	—	7
1943	—	8	18	4	—	—	—	4	1	1	—	—	36
1944	—	8	13	8	2	—	—	3	3	2	—	—	39
1945	—	7	10	2	3	1	—	—	1	—	—	—	24
1946	—	2	8	4	1	—	—	—	1	—	—	—	16
1947	1	11	21	11	3	3	1	2	1	1	3	1	59

Fatal Accidents in Houses and other Places of Residence.—Until April, 1948, coroners were not asked to include in their certificates relating to fatal accidents information about the place where the accident occurred. It is therefore not possible to provide accurate statistics of fatal accidents in places of residence for the years 1946 and 1947 but estimates have been made on the assumption that certain types of accidents nearly always occur indoors. The subtraction from these of accidents stated to have been occupational (except housework) leaves a number of deaths that can be regarded as probably having resulted from accidents in houses or places of residence, including hospitals.

Table CXLIV shows estimated numbers of deaths from these causes from 1940–42 to 1947, and with respect to certain causes (except males at ages 15–74) for the periods 1931–33 and 1935–37 also. The mean annual numbers of deaths of persons at all ages in 1940–42, 1943–45 and 1946–47 are shown below.

	1940–42	1943–45	1946–47
Coal gas and carbon monoxide poisoning	281	289	405
Acute poisoning not by gas	130	123	169
Conflagration	134	114	103
Burns by clothing (any means)	464	384	350
Burns by falling into fire	115	72	66
Scalds	363	235	146
Mechanical suffocation in bed, cot, cradle	353	384	455
Mechanical suffocation by food or rubber teat ...	220	232	427
Swallowing foreign body	58	54	68
Injury by cutting or piercing instruments	9	11	13
Fall downstairs	1,122	773	597
Other falls indoors, or from bed or pram	1,469	1,367	1,456
Fall from ladder	78	71	64
Fall from window	115	101	97
Electric currents	53	50	51

Table CXLIV.—Deaths from Accidents, not known to be occupational, which by their description occurred most probably in Places of Residence, according to Sex and Age (excluding non-civilians). 1940-42, 1943-45, 1946 and 1947. Also for some causes in 1931-33 and 1935-37.

Int. List No. (1940)	Cause of death (type of accident)	Sex	Period	0–	1–	5–	15–	45–	65–	75 and over	All ages
178 pt.	Coal gas and carbon monoxide poisoning.	M.	1931–33	3	3	5	?	?	?	32	?
			1935–37	4	6	11	?	?	?	50	?
			1940–42	4	11	18	130	118	82	72	435
			1943–45	3	10	16	83	109	81	90	392
			1946	1	9	2	31	33	32	46	154
			1947	1	5	4	32	42	48	50	182
		F.	1931–33	—	5	3	60	67	52	64	251
			1935–37	1	4	8	64	73	61	74	285
			1940–42	6	11	19	74	78	81	138	407
			1943–45	3	12	12	74	89	104	181	475
			1946	1	4	2	23	37	56	85	208
			1947	1	9	5	36	56	55	103	265
179	Acute poisoning not by gas.	M.	1931–33	5	22	4	?	?	?	12	?
			1935–37	—	19	4	?	?	?	10	?
			1940–42	4	32	6	57	64	25	9	197
			1943–45	5	32	4	61	54	23	10	189
			1946	2	14	2	22	20	13	2	75
			1947	1	14	3	21	27	9	6	81
		F.	1931–33	2	16	4	76	70	22	12	202
			1935–37	3	18	3	70	75	17	14	200
			1940–42	2	28	6	58	62	24	14	194
			1943–45	4	22	4	66	54	17	12	179
			1946	—	4	1	23	33	11	5	77
			1947	1	15	4	22	40	18	5	105
180	Conflagration ...	M.	1931–33	4	13	6	?	?	?	14	?
			1935–37	2	7	13	?	?	?	14	?
			1940–42	13	39	31	35	38	29	21	206
			1943–45	19	41	25	24	26	23	15	173
			1946	6	12	5	5	7	5	8	48
			1947	3	9	7	7	6	2	11	45
		F.	1931–33	6	13	10	15	13	9	19	85
			1935–37	6	9	12	22	20	13	25	107
			1940–42	8	27	25	43	36	32	24	195
			1943–45	13	22	19	36	35	22	21	168
			1946	—	8	4	13	9	10	18	62
			1947	2	1	7	8	6	11	16	51
181 pt.	*Burns by clothing (any means).	M.	1940–42	11	55	45	31	27	38	48	255
			1943–45	5	50	46	15	25	35	54	230
			1946	3	12	5	4	3	8	10	45
			1947	1	8	9	3	7	9	27	64
		F.	1940–42	9	143	205	166	170	167	277	1,137
			1943–45	5	125	176	80	143	140	254	923
			1946	—	29	52	26	33	47	104	291
			1947	4	35	29	12	36	50	133	299

Table CXLIV. (*contd.*)

List No. (1940)	Cause of death (type of accident)	Sex	Period	0–	1–	5–	15–	45–	65–	75 and over	All ages
181 pt.	*Burns by falling into fire.	M.	1940–42	8	8	3	6	18	51	48	142
			1943–45	6	6	1	1	6	23	47	90
			1946	1	2	—	—	3	8	18	32
			1947	3	3	—	—	4	9	14	33
		F.	1940–42	11	15	3	18	34	50	71	202
			1943–45	6	8	2	10	19	26	56	127
			1946	—	—	—	—	6	5	16	27
			1947	—	1	—	3	6	7	22	39
181 pt.	*Scalds	M.	1940–42	64	458	30	22	17	17	14	622
			1943–45	37	292	17	9	7	7	15	384
			1946	12	63	2	—	3	2	5	87
			1947	12	48	—	—	1	8	1	70
		F.	1940–42	47	269	23	25	27	30	46	467
			1943–45	30	196	8	8	19	24	36	321
			1946	9	43	4	1	4	6	8	75
			1947	8	30	1	1	4	7	9	60
182 pt.	*Mechanical suffocation in bed, cot, cradle.	M.	1940–42	589	16	—	4	3	1	—	613
			1943–45	692	13	—	1	1	—	1	708
			1946	232	3	—	1	—	—	1	237
			1947	260	5	—	—	1	—	—	266
		F.	1940–42	429	11	—	1	3	—	1	445
			1943–45	426	11	—	4	2	—	1	444
			1946	178	4	—	1	1	1	—	185
			1947	213	2	—	5	1	—	—	221
182 pt.	*Mechanical suffocation by food or rubber teat.	M.	1940–42	254	27	6	36	36	19	15	393
			1943–45	271	22	7	25	38	17	7	387
			1946	157	11	1	11	12	6	6	204
			1947	242	8	5	19	12	17	3	306
		F.	1940–42	165	21	1	28	23	17	13	268
			1943–45	224	18	4	16	26	10	10	308
			1946	116	5	—	7	13	5	4	150
			1947	144	10	2	12	13	9	4	194
195 pt.	Swallowing foreign body.	M.	1931–33	12	17	15	?	?	?	2	?
			1935–37	5	29	14	?	?	?	6	?
			1940–42	5	8	11	21	31	15	5	96
			1943–45	7	9	7	14	31	13	3	84
			1946	4	5	—	7	9	8	3	36
			1947	5	5	1	7	14	5	1	38
		F.	1931–33	5	13	4	18	29	4	2	75
			1935–37	6	17	7	26	24	16	3	99
			1940–42	4	7	6	19	28	6	9	79
			1943–45	8	10	8	9	27	15	—	77
			1946	3	5	—	9	10	7	—	34
			1947	1	2	2	7	7	4	4	27

Table CXLIV. (*contd.*)

List No. (1940)	Cause of death (type of accident)	Sex	Period	0–	1–	5–	15–	45–	65–	75 and over	All ages
185	Injury by cutting and piercing instruments.	M.	1931–33	1	1	3	?	?	?	1	?
			1935–37	1	3	4	?	?	?	2	?
			1940–42	—	2	5	10	2	2	2	23
			1943–45	—	1	4	8	7	2	1	23
			1946	1	—	1	1	1	—	—	4
			1947	1	—	2	4	2	2	—	11
		F.	1931–33	2	2	—	8	2	—	1	15
			1935–37	—	—	3	2	4	2	1	12
			1940–42	—	—	2	3	—	—	—	5
			1943–45	1	1	1	5	1	—	—	9
			1946	—	—	—	—	—	1	—	1
			1947	—	2	—	3	3	—	1	9
186 pt.	*Fall downstairs ...	M.	1940–42	4	19	10	117	388	366	452	1,356
			1943–45	4	23	5	63	235	271	352	953
			1946	2	6	2	10	48	73	93	234
			1947	3	5	4	18	40	56	120	246
		F.	1940–42	8	10	9	83	400	573	926	2,009
			1943–45	1	13	8	50	216	353	725	1,366
			1946	1	2	1	7	53	73	216	353
			1947	—	2	1	6	50	90	211	360
186 pt.	*Other fall indoors, or from bed or pram.	M.	1940–42	17	23	5	31	130	319	713	1,238
			1943–45	21	30	8	27	83	231	679	1,079
			1946	4	10	1	10	28	72	236	361
			1947	15	10	2	11	34	89	267	428
		F.	1940–42	7	16	7	30	242	671	2,196	3,169
			1943–45	8	21	7	26	208	556	2,195	3,021
			1946	4	8	—	7	54	176	804	1,053
			1947	6	3	—	7	55	207	791	1,069
186 pt.	*Fall from ladder ...	M.	1940–42	—	2	2	39	76	56	26	201
			1943–45	—	1	1	32	69	48	39	190
			1946	—	—	—	12	18	16	8	54
			1947	—	—	—	11	19	20	10	60
		F.	1940–42	—	1	—	3	10	13	6	33
			1943–45	—	—	—	2	8	6	8	24
			1946	—	—	—	2	3	4	3	12
			1947	—	—	—	—	—	—	1	1
186 pt.	*Fall from window ...	M.	1940–42	—	17	4	29	61	32	40	183
			1943–45	—	14	6	38	27	27	43	155
			1946	—	10	—	5	5	4	11	35
			1947	—	8	1	6	11	12	15	53
		F.	1940–42	1	11	6	19	51	38	35	161
			1943–45	1	21	3	20	40	26	37	148
			1946	—	7	1	10	8	6	15	47
			1947	1	2	2	5	18	10	20	58
193 pt.	Electric currents ...	M.	1931–33	—	2	11	?	?	?	—	?
			1935–37	—	1	11	?	?	?	—	?
			1940–42	2	9	27	69	14	1	—	122
			1943–45	2	10	27	46	10	1	3	99
			1946	1	4	4	18	7	—	—	34
			1947	—	6	7	20	4	1	1	39
		F.	1931–33	—	—	2	10	3	—	—	15
			1935–37	—	1	—	23	4	—	—	28
			1940–42	—	3	2	21	9	—	1	36
			1943–45	—	5	7	26	10	4	—	52
			1946	—	1	1	7	5	—	—	14
			1947	—	2	1	7	4	—	—	14

* Comparable figures for the pre-war years are not available for these causes.

Accidental deaths from coal gas and carbon monoxide poisoning increased greatly between 1943–45 and 1946–47, as also did deaths from other accidental poisoning. Deaths from burns sustained by falling into a fire dropped by one-third between 1940–42 and 1943–45 and a further decrease occurred in 1946–47. Fatal scalds decreased by 35 per cent. from 1940–42 to 1943–45, and again by 38 per cent. in 1946–47. Deaths reported as due to mechanical suffocation whether classed as " in bed, cot, cradle " or " by food or rubber teat " have been rising for some years. Most of these deaths occur in infancy, and further details will be found in the Infant Mortality section of this volume (pages 44 and 45). Deaths described as due to falls downstairs had a high frequency early in the war and have since diminished, but those due to other falls have not changed greatly. As was pointed out in the Text for 1940–45, the high death rate due to falls indoors early in the war was no doubt attributable to poor lighting of stairs and passages in an effort to maintain blackout.

Table CXLV.—Deaths from Accidents, not known to be occupational, of which substantial but unknown numbers must have occurred in Houses.* 1940-42, 1943-45, 1946 and 1947.

Int. List No.	Cause of death (type of accident)	Sex	Period	0–	1–	5–	15–	45–	65–	75 and over	All ages
181 pt.	Burns from unstated cause.	M.	1940–42	24	47	22	53	46	50	76	318
			1943–45	15	34	29	23	14	36	44	195
			1946	3	6	4	5	3	12	19	52
			1947	1	8	5	6	8	6	13	47
		F.	1940–42	15	69	68	67	93	103	147	562
			1943–45	7	45	48	27	57	67	115	366
			1946	4	9	11	3	13	24	48	112
			1947	3	9	14	7	14	20	42	109
186 pt.	Fracture of leg of unstated cause at ages 65 and over.	M.	1940–42	—	—	—	—	—	59	194	253
			1943–45	—	—	—	—	—	32	159	191
			1946	—	—	—	—	—	18	60	78
			1947	—	—	—	—	—	15	53	68
		F.	1940–42	—	—	—	—	—	168	648	816
			1943–45	—	—	—	—	—	106	482	588
			1946	—	—	—	—	—	34	180	214
			1947	—	—	—	—	—	42	193	235
186 pt.	Injury by fall, crushing, etc., of unstated cause.	M.	1940–42	11	48	114	808	825	451	616	2,873
			1943–45	9	14	62	245	334	272	447	1,383
			1946	2	6	13	98	105	77	166	467
			1947	4	11	19	125	126	87	177	549
		F.	1940–42	9	23	34	41	239	443	1,291	2,080
			1943–45	2	17	20	38	135	294	992	1,498
			1946	—	4	4	12	35	104	398	557
			1947	2	3	1	5	39	105	370	525

* For these causes, the information about the cause of death given on the certificate was insufficient to indicate whether the accident occurred in a house or not.

Table CXLV gives the non-occupational deaths from three ill-defined groups of accidents that must have contained a large proportion which occurred in places of residence, but where it is impossible to estimate the proportion at all accurately. Probably, however, the proportion was at least one-half. The mean annual numbers of deaths of persons of all ages were as follows :—

	1940–42	1943–45	1946–47
Burns from unstated cause	293	187	160
Fracture of leg of unstated cause at ages 65 and over	356	260	298
Injury by fall, crushing, etc., of unstated cause ...	1,651	960	1,049

As in the case of burns by clothing and falling into a fire, burns of unstated cause also declined. The group of deaths from fracture of leg in elderly persons and the large and rather vague group of deaths resulting from falls, crushing, etc., both increased slightly in 1946–47 compared with the previous period.

In the Review for 1940–45, Text page 262, it was assumed that minimal estimates of the number of fatal home accidents could be obtained by adding together the total deaths in Table CXLIV and half the total in Table CXLV. It was thereby estimated that the minimal total of fatal home accidents exceeded 6,000 annually in 1940–42 and was nearly 5,000 annually in 1943–45. On the same assumption the minimal annual total in 1946–47 was 5,215.

		Children under 15	Males 15 and over	Females 15 and over	Total
Annual average in 1940–42	Deaths in CXXVI ...	1,163	1,393	2,408	4,964
	Half of deaths in CXXVII ...	81	530	540	1,151
	Total ...	**1,244**	**1,923**	**2,948**	**6,115**
Annual average in 1943–45	Deaths in CXXVI ...	1,091	1,112	2,056	4,259
	Half of deaths in CXXVII ...	50	268	385	703
	Total ...	**1,141**	**1,380**	**2,441**	**4,962**
Annual average in 1946–47	Deaths in CXXVI ...	1,193	1,112	2,156	4,461
	Half of deaths in CXXVII ...	37	295	422	754
	Total ...	**1,230**	**1,407**	**2,578**	**5,215**

183. Accidental Drowning.—Deaths by accidental drowning classified to No. 183 of the International List in the five years 1935–39 averaged 1,273 per annum (1,007 males, 266 females) and in the six years 1940–45 (civilians only) 1,311 per annum (1,080 males, 231 females). The deaths of civilians in 1946 numbered 1,036 (795 males, 241 females) and in 1947 1,169 (952 males, 217 females). There were, in addition, considerable numbers of drowning fatalities resulting from transport and a few occurring in mines or agriculture or caused by machinery, which are classified to Nos. 169–176. Water transport accidents, which contributed the bulk of these, were the cause of 94 deaths by drowning in 1946 and 94 in 1947, of which 91 and 92 were deaths of males (Table 25). There were also 20 and 40 deaths due to shock following immersion in the two years, classified to No. 195. Excluding these special groups, the crude death rates per million in each year from 1931 were as follows :—

	1931	1932	1933	1934	1935	1936	1937	1938	1939
M. ...	55	62	63	47	53	49	51	46	56
F. ...	12	11	12	10	14	12	14	12	11
	1940	1941	1942	1943	1944	1945	1946	1947	
M. ...	68	75	58	59	60	63	43	49	
F. ...	12	11	10	11	9	11	11	10	

The distribution by sex and age of deaths from drowning by water transport accidents and by drowning classed to No. 183 in 1945, 1946, 1947, is given in the table below.

		1945			1946			1947		
		0–	15–	55 and over	0–	15–	55 and over	0–	15–	55 and over
Drowning by Water Transport	M.	7	54	6	8	75	8	6	77	9
	F.	—	1	—	1	2	—	1	1	—
Accidental Drowning Classed to No. 183	M.	452	341	237	326	245	224	373	372	207
	F.	92	76	67	65	96	80	68	79	70

Regional distribution of deaths from violent causes other than suicide or road traffic accidents.—Table CXLVI gives death rates from these causes in 1947 by region and class of area at four ages of males and females.

Table CXLVI.—Violent Causes other than Suicide or Road Traffic Accidents : Death Rates per million living in Regions and different classes of Area by Sex and Age, 1947.

Area	0–		15–		45–		65 and over	
	Males	Females	Males	Females	Males	Females	Males	Females
England and Wales	**319**	**202**	**220**	**38**	**327**	**98**	**895**	**1,057**
Regional Summary :								
South East	297	183	170	49	251	96	903	1,102
Greater London	302	161	168	47	243	108	1,098	1,325
Remainder of South East	292	211	173	52	263	81	704	865
North	359	234	277	29	401	108	920	1,040
North I	383	205	381	32	555	87	971	977
North II	284	243	608	27	628	93	635	958
North III	347	210	232	29	393	153	1,061	1,310
North IV	374	257	192	28	306	93	885	928
Midland	292	173	175	33	276	80	899	998
Midland I	286	171	186	34	268	85	831	1,084
Midland II	304	178	154	32	291	70	1,023	834
East	323	167	211	26	357	98	759	957
South West	298	178	226	41	306	102	842	1,142
Wales	333	266	352	36	510	98	887	1,008
Wales I	323	256	408	30	555	104	944	1,020
Wales II	356	292	202	52	390	85	766	986
Density Summary :								
County Boroughs* ...	328	225	207	29	335	98	947	1,085
Other Urban Districts* ...	315	203	250	38	352	97	846	991
Rural Districts*	328	200	248	42	361	85	740	860

* Excluding Greater London.

At ages under 15 the male death rate for England and Wales was 319 per million and the female rate 202, yielding a male to female ratio of 1·58. The male rate was highest in North I (383), and the female rate highest in Wales II (292). The male rate was the same in the county boroughs as in the rural districts, but the female rate increased with urbanisation.

At ages 15–44, the national rate for males was 220 and for females 38, giving a sex ratio of 5·79. There was wider disparity between the male rates of different regions, the rates ranging from 608 in North II to 154 in Midland II. The female rate was highest in the South East (excluding Greater London) and in Wales II (each 52) and lowest in the East region (26). For the density aggregates, the male and female rates were both lowest in the county boroughs.

At ages 45–64 the male rate for the country as a whole was 327 and the female rate 98, the sex ratio being 3·34. As in the previous age group the male rate was highest in North II (628). The region with the lowest rate for males was Greater London (243). North III (153) had the highest female rate and Midland II the lowest (70). The female rate tended slightly to increase with urbanisation in contrast with the male rate, which decreased.

At ages 65 and over the national rate for males (895) was *less* than the female rate (1,057) and the sex ratio was 0·85. There was an excess of female mortality in each region except Midland II, which had the third highest male rate and the lowest female rate. The male rate was lowest in North II in contrast to the high rates in this region among younger men. For both sexes the highest rates were in Greater London and mortality was higher in the county boroughs and the other urban districts than in the rural districts.

195a. Vaccinia and other sequelæ of vaccination against smallpox.—This section deals not only with deaths classified to 195a1, Vaccinia, and 195a2, Other sequelæ of vaccination against smallpox, but also with deaths classified to some other condition as the underlying cause of death but with mention of vaccination on the certificate, or ascertained by other means to have been associated with vaccination. Deaths resulting from prophylactic inoculation against diseases other than smallpox are classified to 195b, and are discussed in a subsequent section.

In 1946 there were two deaths (both of civilians) assigned to vaccinia, namely :—

(1) Male aged 26, certified as post-vaccinal encephalitis, and

(2) Female aged three months, certified as generalized vaccinia *due to* vaccination.

There were no deaths assigned to other sequelæ of vaccination. In addition to the two deaths above, there were three others with vaccination mentioned on the death certificate but which upon further enquiry were assigned to other causes. Details of these cases are:—

(1) Female aged five months, certified as massive collapse of lung *due to* bronchiolitis with post-vaccinal encephalitis mentioned in Part II of the certificate and not regarded by the certifier as more than a contributory cause of death ; assignment in this case was to bronchiolitis.

(2) Female aged five months, certified as infantile convulsions *due to* encephalitis, with no mention of vaccination on the death certificate. Enquiry of the certifier, however, concerning the probable cause of the encephalitis revealed that the cause was vaccination. Further investigation showed, however, that the implication of vaccination was equivocal and the death was accordingly assigned to encephalitis of unascertained cause.

(3) Female aged 27, certified as encephalitis lethargica (post-vaccinal). Enquiry revealed that vaccination had taken place twenty years previously and that some months later she had developed symptoms of encephalitis lethargica. This death was assigned to "sequelæ of encephalitis lethargica."

In 1947 there were five deaths (all of civilians) classed to 195a1 Vaccinia, namely :—

(1) Male aged six months, certified as generalized vaccinia following vaccination.
(2) Female aged three years, certified as post-encephalitis epilepsy *due to* vaccination.
(3) Female aged seven months, certified as encephalitis *due to* vaccinia.
(4) Female aged one month, certified as post-vaccinal encephalitis.
(5) Male aged 35, certified as acute myocardial failure *due to* post-vaccinal encephalitis.

There were three deaths in 1947 assigned to 195a2, Other sequelæ of vaccination, namely :—

(1) Male aged 14, certified as status thymicolymphaticus following vaccination.
(2) Female aged four months, certified as pyæmia staphylococcus albus infection through vaccination place in arm.
(3) Female aged five months, certified as streptococcal septicæmia following vaccination.

In addition to the foregoing there were five death certificates in 1947 with mention of vaccination or its effects, but where further enquiry indicated that the assignment should be to another cause. Details of these cases are as follows :—

(1) Female aged 31, certified as Parkinson's disease *due to* post-vaccinal encephalitis. Vaccination had taken place 24 years before and Parkinsonism had gradually developed thereafter. This case was assigned to Parkinsonism of unknown cause.
(2) Male aged five months, certified as broncho-pneumonia with mention of vaccination in Part II of the certificate. Enquiry revealed that the child had died nine days after vaccination, but that the certifying physician did not consider that the vaccination had contributed towards death. This case was accordingly assigned to broncho-pneumonia.
(3) Male aged five months, certified as post-vaccinal encephalitis with gastro-enteritis stated in Part II. Enquiry revealed that the vaccination had not "taken" and that the clinical picture did not resemble a post-vaccinal encephalitis. This case was classed to gastro-enteritis.
(4) Female aged nine months, certified as cardiac failure *due to* broncho-pneumonia *due to* encephalitis (after vaccination). Enquiry indicated that illness did not develop until three months after vaccination which had "taken" with normal reaction. Assignment was made accordingly to encephalitis of unknown origin.
(5) Female aged five months, certified as bilateral broncho-pneumonia, toxic diarrhœa, vomiting and dehydration, generalized vaccinia and whooping cough. There was no evidence of encephalitis and assignment was made to whooping cough on the grounds that it, rather than the vaccinia, had led to the fatal issue.

195b. Other accidents due to medical or surgical intervention.—This group includes 195ba Anæsthetic Accidents excluding deaths from anæsthesia known to have been administered in the course of medical or surgical treatment of

pre-existent disease or injury ; such deaths are classed to the pre-existent causes. It includes only anæsthetic accidents in normal childbirth, in operations for sterilization or for æsthetic purposes or in operations whose purpose was unstated or could not be ascertained. One death was classed to this head in 1946 and two deaths in 1947.

195bb includes the sequelæ of *preventive* inoculation (except vaccination against smallpox) and of operations for sterilization, æsthetic operations, etc., but not for curative purposes. It does not include deaths from surgical or medical treatment known to have been given for the alleviation of pre-existent disease or injury which are classed to these causes.

In 1946 there were three deaths classed to 195bb, namely :—

(1) Male aged 11 months, certified as encephalitis following infection of arm after anti-diphtheria immunisation.
(2) Male aged 13, certified as anaphylactic shock following injection of anti-tetanic serum after being bitten by a dog.
(3) Female aged 38 certified as œdema of lungs *due to* iodine idiosyncrasy after injection of iodatal into fallopian tubes for sterility.

In 1947 there were five deaths classified to 195bb, namely :—

(1) Male aged 15, certified as inhibition of the cardiac and respiratory centres *due to* anaphylaxis following an injection of anti-gas gangrene serum for a dog-bite.
(2) Male aged 12 months certified as persistent vomiting *due to* anaphylaxis *due to* anti-diphtheritic serum. Enquiry indicated that an A.P.T. injection (not anti-diphtheritic serum as stated on the certificate) had been given six weeks and again 16 days before death but no clear connection between the injections and death could be established.
(3) Female aged 33, certified as sterilization.
(4) Female aged 34 certified as acute pulmonary œdema and heart failure *due to* operative shock following operation for sterilization.
(5) Male aged 68 certified as *due to* Congo Red dye for test of supposed amyloid disease (non-existent).

199, 200. Ill-defined Causes of death.—Deaths classified to 199 are those certified as due to " sudden death ", of which there were 101 in 1946 and 95 in 1947. These numbers are considerably less than those recorded ten years previously ; deaths classified under this head numbered 285 in 1936 and 242 in 1937.

Deaths classified to 200 are sub-divided into 200(a)(1) Heart failure (298 deaths in 1946 and 247 in 1947), 200(a)(2) Other ill-defined causes (64 in 1946 and 60 in 1947), 200(b) Found dead, cause unknown (39 in 1946 and 49 in 1947), and 200(c) Other deaths from unknown or unspecified cause (27 in 1946 and nine in 1947). The total of deaths assigned to No. 200 was 1,086 in 1931, 872 in 1938, 428 in 1946 and 365 in 1947, showing a steady fall in recent years.

Other ill-defined causes of death not included in Nos. 199, 200 of the International List are No. 158 Congenital debility (under one year of age), No. 162(a) Old age, and 162(c) Senility without mention of senile dementia. Deaths classified to congenital debility numbered 2,115 in 1931, 1,096 in 1938, 622 in 1946 and 624 in 1947, but, in relation to the increased number of births in 1946 and 1947, the decline in mortality was even greater than the decline in the number of deaths suggests.

Deaths classified to old age and senility without dementia numbered 16,598 in 1931, 14,584 in 1938, 15,354 in 1946 and 14,822 in 1947. The C.M.I. for the whole group including senile dementia, which makes allowance for the ageing

of the population, dropped from unity in 1938 to 0·701 (male) and 0·775 (female) in 1947, indicating a substantial reduction in the mortality attributed to this cause.

Sometimes medical practitioners find themselves in difficulty when faced with the problem of certifying the cause of death of elderly persons. If there is evidence of a definite disease which, in the opinion of the medical attendant, has contributed towards death, then that disease should be certified as the cause of death in preference simply to " old age ". Deaths certified as due to old age with mention of a definite disease are always assigned to the definite condition. Nevertheless, it is recognized that a number of old people die without any evidence whatever of definite disease, and in respect of this relatively small group the practitioner would be justified in certifying the cause of death as " old age " or one of its synonyms. If the decedent is aged 65 or over " old age " mentioned alone on the certificate has been accepted as a sufficient cause of death. At younger ages enquiries have been sent to ascertain whether a more definite cause of death was also present.

All the deaths classified to Nos. 199, 200 Ill-defined causes of death, have been the subject of enquiry to the certifying medical practitioners before being classed, except in those instances where the wording of the certificate (*e.g.* " cause unknown ") made it clear that reference to the certifier would be unproductive of additional information.

Enquiries to medical practitioners and to coroners requesting further information about indefinitely certified deaths numbered 9,718 in 1946 (to which there were 9,100 replies) and 9,719 in 1947 (with 9,070 replies). The manner in which those deaths were allocated as a result of enquiry is shown in Table CXLVII a, b. Out of 178 replies concerning deaths certified in the two years to pyæmia or septicæmia, six were allocated to cerebro-spinal fever, eight to diseases of tonsils, and 19 to diseases of skin and cellular tissue. 83 replies concerning tuberculosis resulted in 58 being assigned to respiratory tuberculosis, the remainder to various sites. 3,495 replies were received concerning the site of primary growth in cases of cancer, resulting in the allocation of 3,295 cases to a definite site. 560 cerebral tumours that had been the subject of post-mortem examination were ascertained to consist of 376 cancers (including 290 gliomata), four cases of tuberculosis, one case of syphilis and 115 benign tumours. Out of 1,302 ill-defined tumours of other sites 997 were ascertained to have been malignant. Enquiries about 1,297 deaths certified as due to " rheumatism " resulted in the allocation of 184 cases to rheumatic fever, two to rheumatoid arthritis, six to other varieties of chronic rheumatism and 1,017 to rheumatic heart disease.

Out of 227 deaths originally certified to " encephalitis " four were assigned to syphilis, seven to influenza, three to poliomyelitis, two to polioencephalitis, 107 to encephalitis lethargica and one each to whooping cough, measles and non-meningococcal meningitis. 165 replies concerning cerebro-spinal meningitis showed that 138 were meningococcal. " General paralysis " was found to mean general paralysis of the insane in nine out of ten cases enquired about ; among 41 cases of " paralysis " one was due to syphilis, three to poliomyelitis, one to paralysis agitans ; and 51 cases of " paraplegia " included four cases with syphilis and one case of paralysis agitans.

189 enquiries were made about aortitis, arteritis and endarteritis ; syphilis was implicated in 69 cases, arteriosclerosis in 40 cases. Fibroid phthisis was confirmed to mean respiratory tuberculosis in 62 out of 65 cases, while the three other replies failed to amplify the original statement.

Table CXLVIIa.—Replies to Enquiries respecting Indefinitely Certified Causes of Death. 1946.

Subject of enquiry	Replies received	Replies amplifying previous information	Deaths allocated as the result of enquiry to certain headings
Pyæmia, septicæmia, etc.	89	77	Cerebro-spinal fever 3, Diseases of the tonsils, Cellulitis, acute abscess 4, Diseases of the skin and cellular tissue 8.
Tuberculosis	47	47	Tuberculosis of the respiratory system 35, Tuberculosis of the central nervous system 2, Tuberculosis of the intestines and peritoneum 3, Tuberculosis of the vertebral column 1, Tuberculosis of other bones and joints 1, Tuberculosis of the skin and subcutaneous cellular tissue 1, Tuberculosis of the lymphatic system 1, Disseminated tuberculosis 2.
Cancer (part or organ not stated).	1,822	1,721	Part or organ stated in 1,716 cases.
Cerebral tumour (P.M. cases).	234	225	Syphilis 1, Cancer 167 (including 115 cases of glioma), Benign tumour 44.
Tumour of other sites...	635	597	Syphilis 1, Cancer 474.
Rheumatism	679	679	Rheumatic fever 83, Rheumatoid arthritis 1, Other chronic rheumatism 4, Rheumatic heart disease 575.
Encephalitis	121	99	Syphilis 3, Influenza 5, Acute polioencephalitis 1, Encephalitis lethargica 54, Other forms of encephalitis 22.
Cerebro-spinal meningitis	64	64	Cerebro-spinal fever 59.
Cerebral and spinal sclerosis.	13	12	Disseminated sclerosis 3, Arteriosclerosis 7.
Paraplegia	28	21	Syphilis 2, Other diseases of the spinal cord 4.
Paralysis	19	18	Syphilis 1, Acute poliomyelitis 1, Other diseases of the spinal cord 4.
Aortitis, arteritis and endarteritis.	107	94	Syphilis 37, Arteriosclerosis 17.
Fibroid phthisis	31	28	Tuberculosis of the respiratory system 28.
Stomatitis	9	6	Diseases of the teeth and gums 5.
Stricture of œsophagus...	11	7	Cancer 2.
Hæmatemesis	54	43	Cancer 7, Ulcer of stomach or duodenum 26.
Pyloric stenosis, obstruction, etc.	62	52	Cancer 5, Ulcer of stomach or duodenum 42.
Jaundice	65	59	Syphilis 1, Other infective or parasitic diseases 3, Cancer 15, Biliary calculi 6, Other diseases of the gall bladder and bile ducts 10.
Peritonitis	95	80	Generalised infection by bacillus coli 1, Cancer 6, Ulcer of stomach or duodenum 6, Appendicitis 14, Intestinal obstruction 6, Other diseases of the intestines 11, Other diseases of the gall bladder and bile ducts 5, Diseases of the female genital organs 7.
Pemphigus of infants ...	23	21	Syphilis 2, Pemphigus neonatorum 18.
Hydrocephalus	36	34	Cerebro-spinal fever 2, Syphilis 1.
Violence	463	458	Other accidents of childbirth 1, Precise form of suicide 69, Injury in mines and quarries 15, Injury by machinery 6, Drowning 4, Injury by fall, crushing, etc., 56.
Syncope, heart failure ...	254	240	Cerebro-spinal fever 1, Scarlet fever 1, Syphilis 1, Diseases of the heart 139, Arteriosclerosis 16, Bronchitis 8, Nephritis 7.
Operation	604	599	Syphilis 3, Cancer 62, Tumour of female genital organs 66, Other diseases of the thyroid gland 22, Ulcer of stomach or duodenum 67, Appendicitis 15, Hernia, intestinal obstruction 32, Biliary calculi 53, Other diseases of the gall bladder and bile ducts 20, Diseases of the prostate 43, Diseases of the female genital organs 51.
Lung abscess	138	114	Tuberculosis of the respiratory system 3, Influenza 2, Cancer 3.
Meningitis	129	98	Cerebro-spinal fever 30, Tuberculosis of the respiratory system 2, Tuberculosis of the central nervous system 9, Influenza 3.
Uræmia	245	221	Cancer 8, Diseases of the prostate 30, Chronic nephritis 141.
Mesenteric thrombosis	105	77	Syphilis 1, Arteriosclerosis 25.
Anæmia	187	178	Tuberculosis of the respiratory system 1, Cancer 6, Diseases of the heart 16, Pernicious anæmia 48, Hyperchromic anæmia 12, Hypochromic anæmia 24.
Congestive heart failure...	254	249	Tuberculosis of the respiratory system 1, Syphilis 1, Diseases of the heart 177, Arteriosclerosis 10, Bronchitis 18, Nephritis 7.
Other indefinite forms of certification.	3,095	2,882	
Total	**9,718**	**9,100**	

In addition, 992 enquiries were made in connection with Parturition.

Table CXLVIIb.—Replies to Enquiries respecting Indefinitely Certified Causes of Death. 1947.

Subject of enquiry	Replies received	Replies amplifying previous information	Deaths allocated as the result of enquiry to certain headings
Pyæmia, septicæmia, etc.	89	81	Cerebro-spinal fever 3, Tuberculosis 3, Syphilis 1, Polioencephalitis 1, Diseases of the tonsils 4, Diseases of the skin and cellular tissue 11.
Tuberculosis	36	36	Tuberculosis of the respiratory system 23, Tuberculosis of the central nervous system 1, Tuberculosis of other bones and joints 3, Tuberculosis of the lymphatic system 1.
Cancer (part or organ not stated).	1,673	1,604	Part or organ stated in 1,579 cases.
Cerebral tumour (P.M. cases).	326	307	Tuberculosis of the central nervous system 4, Cancer 209 (including 175 cases of glioma), Benign tumour 71.
Tumour of other sites...	667	651	Tuberculosis 2, Cancer 523.
Rheumatism	618	613	Rheumatic fever 101, Rheumatoid arthritis 1, Other chronic rheumatism 2, Rheumatic heart disease 442.
Encephalitis	106	89	Whooping cough 1, Tuberculosis of the central nervous system 2, Influenza 2, Measles 1, Poliomyelitis 3, Polioencephalitis 1, Encephalitis lethargica 53, Syphilis 1, Other forms of encephalitis 13, Meningitis (non-meningococcal) 1.
Cerebrospinal meningitis	101	97	Influenza 1, Cerebrospinal fever 79, Tuberculosis of the central nervous system 2, Syphilis 1, Meningitis (non-meningococcal) 6.
Paraplegia	23	19	Syphilis 2, Other diseases of the spinal cord 5, Paralysis agitans 1.
General paralysis (outside asylums).	10	10	General paralysis of the insane 9.
Paralysis	22	18	Poliomyelitis 2, Other diseases of the spinal cord 5, Paralysis agitans 1.
Aortitis, arteritis and endarteritis.	82	76	Syphilis 32, Arteriosclerosis 23.
Fibroid phthisis	34	34	Tuberculosis of the respiratory system 34.
Hæmoptysis	10	7	Tuberculosis of the respiratory system 2, Syphilis 1.
Stomatitis	10	8	Thrush, aphthous stomatitis, etc., 2.
Stricture of œsophagus ...	8	7	Cancer 2.
Hæmatemesis	43	33	Cancer 2, Ulcer of stomach or duodenum 19.
Pyloric stenosis, obstruction, etc.	57	55	Cancer 9, Ulcer of stomach or duodenum 41.
Jaundice	57	46	Influenza 1, Other infective or parasitic diseases 1, Cancer 13, Biliary calculi 7.
Peritonitis	84	63	Tuberculosis of the intestines and peritoneum 2, Other tuberculosis 2, Mycoses 2, Cancer 2, Ulcer of stomach or duodenum 4, Appendicitis 13, Hernia 2, Intestinal obstruction 5, Diseases of the female genital organs 3.
Pemphigus of infants ...	12	12	Pemphigus neonatorum 11.
Hydrocephalus	47	45	Tuberculosis of the central nervous system 1, Congenital hydrocephalus 40.
Violence	555	533	Precise form of suicide 92, Injury by fall 83, Injury in mines and quarries 18, Injury by machinery 8, Road transport accidents 150.
Syncope, heart failure ...	232	218	Syphilis 1, Cancer 1, Diseases of the heart 138, Arteriosclerosis 13, Bronchitis 13, Nephritis 2.
Operation	638	617	Tuberculosis 9, Cancer 67, Tumours of the female genital organs 48, Ulcer of stomach or duodenum 103, Appendicitis 15, Hernia, intestinal obstruction, etc., 29, Biliary calculi 63, Other diseases of the gall bladder 25, Diseases of the prostate 46, Diseases of the female genital organs 46, Congenital malformations 5, Violence 14.
Lung abscess	140	118	Tuberculosis of the respiratory system 5, Syphilis 2, Influenza 3, Cancer 7.
Meningitis	171	89	Cerebro-spinal fever 37, Tuberculosis of the respiratory system 2, Tuberculosis of the central nervous system 10, Influenza 7, Poliomyelitis 1, Polioencephalitis 1, Cancer 1.
Uræmia	245	234	Gonococcal infections 1, Cancer 9, Diseases of the prostate 36, Chronic nephritis 118.
Mesenteric thrombosis ...	149	130	Tuberculosis of the intestines and peritoneum 1, Cancer 2, Arteriosclerosis 44.
Anæmia	187	170	Cancer 7, Diseases of the heart 17, Pernicious anæmia 33, Hyperchromic anæmia 13, Hypochromic anæmia 25.
Congestive heart failure...	323	314	Tuberculosis of the respiratory system 1, Syphilis 1, Influenza 1, Cancer 1, Diseases of the heart 227, Arteriosclerosis 23, Bronchitis 24, Nephritis 5.
Peptic ulcer	248	224	Cancer 2, Ulcer of the stomach 121, Ulcer of the duodenum 97.
Other indefinite forms of certification.	2,716	2,512	
Total	**9,719**	**9,070**	

In addition 917 enquiries were made in connection with Parturition.

Stricture of the œsophagus was stated to have resulted from cancer in four out of the 19 replies received. Out of 97 cases of hæmatemesis, nine were subsequently attributed to cancer, 45 to ulcer of stomach or duodenum. 122 enquiries concerning jaundice revealed that 28 were thought to be due to cancer, 13 to gall stones and ten to other diseases of gall bladder and bile ducts. Peritonitis was the subject of 179 enquiries revealing eight cases of cancer, ten of ulcer of stomach or duodenum, 27 of appendicitis, two of tuberculosis of intestines and peritoneum, two hernias and 11 cases of intestinal obstruction.

1,018 enquiries were made about deaths from violence and the replies led to a more precise classification in 991 cases. 1,242 enquiries about deaths following operation elicited information in 1,216 cases about the condition for which the operation was performed, and these deaths were allocated accordingly.

As a result of 374 enquiries about anæmia 13 were attributed to cancer, 33 to heart disease, 81 to pernicious anæmia, 25 to hyperchromic and 49 to hypochromic anæmia.

Enquiries for fuller information about 577 deaths certified to congestive heart failure revealed a wide variety of underlying causes, including respiratory tuberculosis (2), syphilis (2), arteriosclerosis (33), bronchitis (42), nephritis (12), influenza (1), cancer (1), diseases of the heart (404).

Special enquiries into deaths connected with childbearing totalled 1,909 in the two years.

In addition to the foregoing, enquiries were addressed to medical practitioners who had initialled Statement " B " on the back of the form of medical certificate to indicate that they might be able, at a later date, to provide further details about the cause of death than were available at the time of signing the certificate. In 1946–47 enquiries in this connection totalled 10,952 and 8,745 replies were received, amending the original certificate in 4,076 cases.

Anæsthetics.—Information about deaths during or connected with the administration of an anæsthetic is obtained by secondary tabulation, since primary tabulation classifies such deaths to the disease or injury on account of which the anæsthetic was administered. A few deaths occur each year where anæsthesia was not being given for the purposes of treatment or of diagnosis of disease, and these deaths are classified to No. 195ba " Anæsthetic Accidents." There was one such death in each year 1946 and 1947. They appear amongst " Other Causes " in Table CLI and are also included in the other tables in this section.

Table CXLVIII shows the numbers of deaths by five-year groups from 1901–05, and by single years from 1921. Total deaths in 1936–40 and 1941–45 averaged 858 and 796 per year compared with 751 in 1946 and 728 in 1947. In the following table the deaths at different ages in successive periods since 1931–35 have been expressed as percentages of those in 1931–35.

At most ages there was a rise between 1931–35 and 1936–40 followed by a progressive downward tendency. However, at ages over 65 among males and over 55 among females the number of deaths continued to increase, the extent of increase being much greater than could be accounted for by the larger number of elderly persons in the population. It is not possible to distinguish, from death certification, how many deaths were due directly or indirectly to the anæsthetic and how many were due not to the anæsthetic but to other circumstances associated with the operation or examination for which the anæsthetic was administered. Thus the rising number of deaths are not necessarily due solely to anæsthesia. A still greater source of difficulty in the interpretation of these

	All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Male									
1931–35 ...	100	100	100	100	100	100	100	100	100
1936–40 ...	106	103	106	100	121	98	105	96	120
1941–45 ...	101	94	94	81	118	100	105	89	130
1946 ...	100	95	73	57	79	84	118	103	148
1947 ...	88	89	56	76	67	63	87	83	148
Female									
1931–35 ...	100	100	100	100	100	100	100	100	100
1936–40 ...	114	100	103	94	107	107	110	140	154
1941–45 ...	102	91	68	72	80	96	106	130	191
1946 ...	91	68	70	53	62	64	88	121	234
1947 ...	99	71	63	58	57	91	98	151	229

Table CXLVIII.—Deaths, including those of non-civilians under, or associated with, Anæsthesia, 1901-47.

Year	Males									Females								
	All ages	0–	5–	15–	25–	35–	45–	55–	65–	All ages	0–	5–	15–	25–	35–	45–	55–	65–
Yearly average :—																		
1901–05* ...	95	14	20	9	13	16	11	7	4	53	6	9	7	11	8	8	3	2
1906–10* ...	125	26	20	12	16	18	16	9	8	77	7	14	9	18	11	10	4	3
1911–15 ...	167	30	23	14	20	28	24	16	10	116	14	17	15	16	22	18	10	5
1916–20 ...	188	36	25	25	27	22	20	19	13	119	11	16	14	21	22	17	7	9
1921–25 ...	229	40	28	20	18	27	36	37	24	169	20	17	17	30	29	25	17	12
1926–30 ...	361	56	47	30	26	37	50	62	53	288	29	29	29	44	51	49	34	23
1931–35 ...	432	63	48	37	33	43	56	80	71	353	34	40	36	60	55	50	43	35
1936–40 ...	457	65	51	37	40	42	59	77	85	401	34	41	34	64	59	55	60	54
1941–45 ...	436	59	45	30	39	43	59	71	92	360	31	27	26	48	53	53	56	67
1921	204	30	29	16	16	19	34	30	30	133	16	23	16	24	21	19	11	3
1922	185	29	21	16	9	27	30	35	18	151	16	15	12	29	31	26	12	10
1923	262	45	37	29	17	38	35	34	27	184	22	23	14	23	32	32	23	15
1924	245	51	30	21	25	21	42	39	16	184	26	11	30	29	31	21	18	18
1925	249	43	25	17	23	28	39	45	29	193	22	14	15	43	32	29	23	15
1926	306	57	43	23	29	34	39	43	38	250	32	22	29	35	44	51	23	14
1927	328	43	51	25	20	30	42	70	47	268	24	28	29	46	47	40	35	19
1928	384	63	41	30	23	43	55	67	62	272	29	21	27	44	45	44	33	29
1929	414	66	61	31	25	43	63	64	61	316	35	35	27	52	52	50	43	22
1930	375	51	41	39	34	34	52	68	56	332	27	39	33	45	66	58	35	29
1931	413	60	51	44	36	41	51	73	57	310	27	40	23	60	55	43	38	24
1932	416	66	49	37	29	45	58	68	64	333	24	40	33	60	58	42	36	40
1933	425	67	47	44	22	42	56	78	69	343	35	39	47	50	44	48	47	33
1934	440	66	45	29	37	43	48	91	81	374	43	43	38	67	45	53	46	39
1935	467	57	47	31	43	45	68	91	85	403	42	37	37	63	75	64	47	38
1936	453	69	53	39	44	39	57	73	79	386	41	33	31	69	59	54	55	44
1937	458	68	48	40	35	40	76	75	76	436	40	41	44	71	65	56	60	59
1938	491	74	59	45	45	36	63	76	93	425	34	43	34	63	61	60	69	61
1939	452	56	51	28	37	44	55	87	94	393	28	47	26	62	61	63	58	48
1940	430	60	44	35	37	49	46	75	84	365	28	39	33	54	51	43	57	60
1941	465	58	54	30	51	52	55	82	83	370	35	36	24	45	63	59	48	60
1942	418	63	40	33	40	44	52	59	87	348	23	25	37	38	47	40	56	82
1943	455	63	48	29	39	41	63	79	93	385	31	26	24	50	66	68	70	50
1944	423	56	47	26	29	44	60	61	100	352	41	26	21	53	42	49	56	64
1945	419	53	34	33	34	32	64	72	97	345	27	20	22	52	48	47	51	78
1946	431	60	35	21	26	36	66	82	105	320	23	28	19	37	35	44	52	82
1947	380	56	27	28	22	27	49	66	105	348	24	25	21	34	50	49	65	80

* Excluding deaths from cancer and strangulated hernia.

figures is the lack of information about the relative size of the populations to which these deaths should be related, i.e. the number of persons of each sex and age to whom an anæsthetic was administered. If for one reason or

another more anæsthetics are administered, then the number of deaths under anæsthesia will rise although the real anæsthetic fatality rate remains unchanged.

The difficulty is greater still when comparison is made between the number of deaths associated with different anæsthetics or combinations of anæsthetics. Table CXLIX a and b give details of deaths in 1946 and 1947 respectively by sex and age for each anæsthetic, and Table CL compares the frequency of deaths associated with a number of inhalation anæsthetics since 1928–30. Average annual numbers of deaths in successive groups of years are shown in the table below.

Anæsthetic	1928–33	1934–39	1940–45	1946–47
Chloroform (with or without nitrous oxide) ...	94·8	61·2	29·8	12·0
Ether alone	225·3	178·0	126·3	82·0
Ether and nitrous oxide alone	23·0	103·3	153·0	107·5
Chloroform and ether (including A.C.E. and with or without nitrous oxide)	201·0	132·0	50·7	19·5
Ether and ethyl chloride (with or without nitrous oxide)	35·2	84·3	73·7	58·0
Other mixtures containing Chloroform or ether ...	12·8	24·8	39·3	61·5
Ethyl chloride (with or without nitrous oxide) ...	11·5	21·3	20·3	29·5
Nitrous oxide alone	45·5	80·0	71·5	34·0

Table CXLIXa.—Deaths, including those of non-civilians, under or connected with the Administration of various Anæsthetics, according to Sex and Age, 1946.

Anæsthetic		All ages	Age (l.b.d.) 0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65 and over
Anæsthesia by inhalation																
Chloroform	M.	6	—	2	—	—	—	—	1	—	—	1	—	—	1	1
	F.	6	—	1	—	—	—	—	1	1	2	—	—	—	—	1
Chloroform and ether	M.	13	1	2	2	—	—	—	—	—	1	2	—	2	2	1
	F.	9	—	—	—	—	1	1	1	2	1	1	—	—	1	1
Chloroform, ether and ethyl chloride	F.	3	—	1	—	1	—	—	—	—	—	—	1	—	—	—
Chloroform, ether and nitrous oxide	M.	2	—	—	—	—	—	—	—	—	—	—	1	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Chloroform and nitrous oxide	M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Chloroform, nitrous oxide and pentothal	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether	M.	52	10	4	9	2	2	1	—	1	1	1	5	3	4	9
	F.	38	—	4	1	3	1	4	1	3	1	3	2	4	3	8
Ether and ethyl chloride	M.	35	8	13	8	—	1	—	—	—	—	—	1	—	3	1
	F.	22	3	5	6	—	—	1	3	—	1	—	2	—	—	1
Ether, ethyl chloride and nitrous oxide	M.	4	—	1	—	—	1	1	—	—	—	—	—	1	—	—
	F.	3	—	2	—	—	—	—	—	—	—	—	—	—	1	—
Ether, ethyl chloride, nitrous oxide and pentothal	M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Ether, ethyl chloride and cocaine	M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ether, ethyl chloride and pentothal	M.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Ether and nitrous oxide	M.	56	—	2	2	1	1	1	5	3	3	2	6	6	8	16
	F.	65	2	2	6	3	—	2	3	2	5	7	8	4	13	8
Ether, nitrous oxide and curare	M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ether, nitrous oxide and cyclopropane	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, nitrous oxide and evipan	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, nitrous oxide and novocaine	F.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Ether, nitrous oxide and pentothal	M.	9	—	—	—	—	—	1	—	—	1	2	1	2	1	1
	F.	7	—	—	—	—	—	—	—	1	—	—	1	2	1	2
Ether, nitrous oxide and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ether, nitrous oxide and stovaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, nitrous oxide and vinesthene	M.	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Ether and cyclopropane	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Ether, cyclopropane and pentothal	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether and decicaine	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Ether and pentothal	M.	3	—	—	—	—	—	—	—	—	—	—	1	—	2	—
	F.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Ether, pentothal and percaine	F.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ether and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether and vinesthene	F.	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Ethyl chloride	M.	11	1	7	2	—	—	—	—	—	—	—	—	—	—	1
	F.	6	—	1	4	—	—	—	—	—	—	—	—	—	—	1
Ethyl chloride and nitrous oxide	M.	8	—	1	2	—	—	1	—	—	1	1	—	1	—	1
	F.	5	—	—	—	—	—	—	—	1	—	1	—	—	1	2
Ethyl chloride, nitrous oxide, cocaine and pentothal	M.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ethyl chloride, nitrous oxide and curarine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ethyl chloride, nitrous oxide and pentothal	M.	3	—	—	—	—	—	—	—	1	—	1	—	—	—	1
	F.	3	—	—	—	—	—	1	—	—	—	—	—	—	2	—
Ethyl chloride, nitrous oxide and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ethyl chloride and curare	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ethyl chloride, morphine and novocaine	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
A.C.E.	F.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Nitrous oxide	M.	19	—	1	—	—	1	1	1	1	1	1	3	—	3	6
	F.	15	—	—	—	1	—	4	1	—	2	—	—	—	1	6
Nitrous oxide and amethocaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nitrous oxide and avertin	M.	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Nitrous oxide and curare	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Nitrous oxide, curare and cyclopropane	F.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Nitrous oxide and cyclopropane	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
	F.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Nitrous oxide, cyclopropane and pentothal	M.	7	—	—	—	—	1	—	1	—	—	2	1	—	2	—

Table CXLIXa. (*contd.*)

Anæsthetic		All ages	Age (l.b.d.) 0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65 and over
Nitrous oxide, cyclopropane, pentothal, omnopon and scopolamine	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Nitrous oxide and novocaine...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nitrous oxide, novocaine and pentothal	F.	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Nitrous oxide and pentothal...	M.	10	—	—	—	—	1	—	—	—	1	2	—	3	1	2
	F.	10	—	—	—	—	—	—	—	2	1	1	1	—	3	2
Nitrous oxide, pentothal and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	3	—	—	—	—	—	—	—	—	—	—	—	—	2	1
Nitrous oxide, pentothal and procaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nitrous oxide and percaine ...	M.	3	—	—	—	—	—	—	—	—	—	—	—	—	3	—
	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Nitrous oxide and planocaine...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Nitrous oxide and procaine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Nitrous oxide and vinesthene...	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Other forms of Anæsthesia																
Amethocaine	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Amethocaine and procaine ...	M.	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Amethocaine and pentothal ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Anethaine	M.	4	—	—	—	—	—	—	1	—	—	—	—	—	3	—
	F.	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Cocaine	M.	4	—	—	—	—	—	1	—	—	—	—	—	—	2	1
	F.	4	—	—	—	—	—	—	—	2	—	—	—	—	1	1
Cocaine hydrochloride ...	F.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Cocaine and pentothal ...	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Cocaine and procaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Curarine and pentothal ...	M.	2	—	—	—	—	—	—	—	—	—	1	—	—	1	—
Curare	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Curare and cyclopropane ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Curare, cyclopropane and pentothal	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Curare and pentothal ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Cyclopropane	M.	10	—	—	1	—	—	—	1	1	1	—	1	1	2	2
	F.	10	—	—	—	—	—	—	1	1	1	2	2	1	—	2
Cyclopropane and coramine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Cyclopropane and pentothal ...	M.	10	—	—	—	—	1	—	1	1	—	—	1	3	3	—
	F.	7	—	—	—	—	1	—	—	1	—	—	—	1	1	3
Cyclopropane and percaine ...	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Decaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Duracaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ephedrine and hydrochloride...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ephedrine and percaine ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Evipan	M.	2	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	F.	3	—	—	—	—	—	1	—	—	—	—	—	—	2	—
Evipan and percaine	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Hyoscine and morphine ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nembutal	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Novocaine	M.	7	1	—	—	—	—	—	—	—	—	—	1	—	—	5
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Novocaine and pentothal ...	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Novutox and pentothal ...	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Para-aminobenzoydicthylaminoc lacol hydrochloride...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Pentothal	M.	55	—	—	1	—	—	—	2	—	—	4	2	3	20	23
	F.	36	—	—	—	—	—	—	2	2	—	2	2	4	8	16
Pentothal and omnopon ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Pentothal and percaine ...	M.	3	—	—	—	—	—	—	—	—	—	—	—	1	1	1
	F.	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Pentothal, percaine and procaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Pentothal and planocaine ...	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Percaine	M.	23	—	—	—	—	1	—	—	2	1	—	—	5	7	7
	F.	11	—	—	—	—	—	—	—	1	1	—	1	—	1	7
Planocaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Procaine	M.	5	—	—	—	—	—	—	—	—	—	—	—	—	1	4
Seconal	M.	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Spinocaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Stovaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Anæsthetic not stated ...	M.	17	1	2	2	—	—	1	—	1	1	—	1	1	—	7
	F.	12	1	—	—	1	—	—	3	—	1	—	1	—	1	4
Total	**M.**	**431**	**24**	**36**	**32**	**3**	**11**	**10**	**14**	**12**	**12**	**24**	**28**	**38**	**82**	**105**
	F.	**320**	**6**	**17**	**19**	**9**	**4**	**15**	**17**	**20**	**17**	**18**	**27**	**17**	**52**	**82**

Table CXLIXb.—Deaths, including those of non-civilians, under or connected with the Administration of various Anæsthetics, according to Sex and Age, 1947.

Anæsthetic		All ages	Age (l.b.d.)													
			0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65 and over
Anæsthesia by inhalation																
Chloroform	M.	3	1	1	—	—	—	—	—	—	—	—	1	—	—	—
	F.	7	—	—	—	—	—	2	—	1	3	—	—	—	1	—
Chloroform and ether	M.	4	1	1	1	—	—	—	—	—	—	—	1	—	—	—
	F.	4	—	1	—	—	—	1	—	1	—	—	—	1	—	—
Chloroform, ether and ethyl chloride	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Chloroform, ether and nitrous oxide	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
	F.	2	—	—	—	—	—	—	—	1	1	—	—	—	—	—
Chloroform, ether, omnopon, scopolamine and pentothal	M.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Chloroform, ether and pentothal	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Chloroform and nitrous oxide	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Chloroform and avertin	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Ether	M.	37	4	9	3	3	3	1	1	—	—	3	—	1	6	3
	F.	37	4	2	2	4	2	2	1	2	2	4	2	1	5	4
Ether and vinyl ether	M.	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Ether and ethyl chloride	M.	27	8	8	6	—	—	1	—	—	—	—	—	1	1	2
	F.	17	3	5	4	1	—	—	1	—	—	2	—	—	—	1
Ether, ethyl chloride and nitrous oxide	M.	4	1	—	—	—	—	1	—	—	—	—	—	1	—	1
	F.	4	—	1	1	—	—	—	—	—	—	—	—	—	2	—
Ether, ethyl chloride, nitrous oxide and curarine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, ethyl chloride and cyclopropane	F.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Ether, ethyl chloride and novocaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether, ethyl chloride and pentothal	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ether, ethyl chloride and percaine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether, ethyl chloride and vinesthene	F.	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Ether and nitrous oxide	M.	44	2	2	3	3	2	2	3	2	—	4	2	2	5	12
	F.	50	—	3	2	1	—	4	—	4	3	3	6	6	7	11
Ether, nitrous oxide and avertin	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ether, nitrous oxide and curarine	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, nitrous oxide, curarine and pentothal	M.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Ether, nitrous oxide and cyclopropane	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ether, nitrous oxide, cyclopropane and pentothal	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Ether, nitrous oxide and metycaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether, nitrous oxide and morphine	M.	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Ether, nitrous oxide and nembutal	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Ether, nitrous oxide and novocaine	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ether, nitrous oxide and pentothal	M.	12	—	—	—	—	1	—	—	—	—	2	2	—	4	3
	F.	15	—	—	—	—	—	—	1	1	1	—	1	2	2	7
Ether, nitrous oxide, pentothal and percaine	F.	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Ether and curarine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ether, curarine, cyclopropane and pentothal	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ether, curarine and pentothal	F.	4	—	—	—	—	—	—	—	—	1	—	1	—	1	1
Ether and cyclopropane	M.	3	—	—	—	—	—	—	—	—	—	1	1	—	—	1
	F.	2	—	—	—	—	1	—	—	—	—	—	—	—	1	—
Ether, cyclopropane and pentothal	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	4	—	—	1	1	—	—	—	—	—	—	—	—	—	2
Ether, omnopon and scopolamine	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Ether and pentothal	M.	4	—	—	—	—	—	—	1	—	—	—	—	—	2	1
	F.	3	—	—	—	—	—	—	—	—	—	—	—	—	2	1
Ether, pentothal and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ethyl chloride	M.	6	1	3	1	—	—	1	—	—	—	—	—	—	—	—
	F.	6	1	2	2	—	1	—	—	—	—	—	—	—	—	—
Ethyl chloride and nitrous oxide	M.	6	1	—	—	—	—	—	—	1	—	1	—	1	1	1
	F.	11	—	—	—	—	—	—	—	1	1	1	—	—	7	1

Table CXLIXb. (*contd.*)

Anæsthetic		All ages	Age (l.b.d.)													
			0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65 and over
Ethyl chloride, nitrous oxide and avertin	F.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Ethyl chloride, nitrous oxide, curarine and pentothal ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Ethyl chloride, nitrous oxide, cyclopropane and pentothal	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ethyl chloride, nitrous oxide, omnopon, scopolamine and pentothal	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ethyl chloride, nitrous oxide and pentothal	M.	6	—	—	—	—	2	—	—	—	—	—	1	—	—	3
	F.	3	—	—	—	—	—	—	1	—	1	—	—	—	1	—
Ethyl chloride, nitrous oxide, pentothal and percaine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Ethyl chloride, nitrous oxide and vinesthene	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Ethyl chloride, omnopon, scopolamine and pentothal	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
A.C.E.	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Nitrous oxide	M.	17	2	—	—	—	1	1	1	—	—	1	—	1	4	6
	F.	17	—	1	1	—	—	—	1	—	—	2	1	3	6	2
Nitrous oxide and avertin ...	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Nitrous oxide, cocaine, cyclopropane and pentothal ...	F.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Nitrous oxide and curarine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	2	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Nitrous oxide, curarine and cyclopropane	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Nitrous oxide, curarine, cyclopropane and pentothal ...	M.	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—
Nitrous oxide, curarine and pentothal	M.	6	—	—	—	—	—	—	—	1	—	1	—	—	1	3
	F.	2	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Nitrous oxide and cyclopropane	M.	5	—	—	—	—	—	—	—	—	—	—	1	—	1	3
	F.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Nitrous oxide, cyclopropane, omnopon, scopolamine and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Nitrous oxide, cyclopropane and pentothal	M.	3	—	—	—	—	1	—	—	—	—	—	—	1	1	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nitrous oxide and pentothal...	M.	12	—	—	1	—	2	—	—	—	—	1	1	3	3	1
	F.	15	—	—	—	—	—	1	1	—	1	—	1	1	7	3
Nitrous oxide, pentothal and percaine	F.	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—
Nitrous oxide and procaine ...	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ethylene, nitrous oxide and pentothal	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Ethylene and pentothal ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Other forms of anæsthesia																
Amethocaine	M.	2	—	—	—	—	—	—	1	—	1	—	—	—	—	—
	F.	4	—	—	—	—	—	—	1	—	—	—	—	1	1	1
Amethocaine and pentothal ...	M.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Anethaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Avertin	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Cocaine	M.	2	—	—	—	—	—	2	—	—	—	—	—	—	—	—
	F.	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—
Cocaine, novocaine and pentothal	M.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Cocaine and pentothal ...	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Curarine	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Curarine and cyclopropane ...	M.	3	—	—	—	—	—	—	—	—	—	—	1	—	1	1
Curarine, cyclopropane and kernithal	F.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Curarine, cyclopropane and pentothal	M.	7	—	—	—	—	—	—	—	2	—	—	—	1	—	4
	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Curarine and pentothal ...	M.	10	—	—	—	—	—	—	—	—	—	3	—	3	2	2
	F.	4	—	—	—	—	—	—	—	—	1	—	—	1	—	2
Cyclonal sodium	F.	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Cyclopropane	M.	12	—	4	1	—	—	1	—	—	—	1	—	2	—	3
	F.	8	—	—	1	—	—	—	—	—	1	—	—	1	3	2
Cyclopropane and pentothal ...	M.	7	—	—	—	—	—	—	—	—	—	1	—	2	3	1
	F.	7	—	—	—	—	—	—	—	—	—	1	2	—	2	2
Cyclopropane and procaine ...	M.	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Decicaine	M.	3	—	—	—	—	—	—	—	—	—	—	1	1	1	—
	F.	2	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Decicaine and procaine ...	M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Duracaine	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Endrine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1

Table CXLIXb. (*contd.*)

Anæsthetic		All ages	Age (l.b.d.)													
			0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65 and over
Ephedrine, novutox, omnopon and scopolamine	M.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Ephedrine and stovaine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Evipan	M.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
	F.	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Hexanastab	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Morphia	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Nembutal and percaine ...	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Novocaine	M.	5	—	1	—	—	—	—	—	—	—	—	1	1	—	2
	F.	4	—	—	—	—	—	—	1	1	—	—	1	—	—	1
Novutox and pentothal ...	M.	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Omnopon	M.	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Omnopon, scopolamine and pentothal	F.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Omnopon, scopolamine and percaine	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Omnopon and scopolamine ...	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Pento-barbital	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Pentothal	M.	47	—	—	—	—	1	1	1	2	—	2	4	3	12	21
	F.	41	—	—	—	1	1	—	2	3	1	—	2	2	7	22
Pentothal and percaine ...	M.	2	—	—	—	—	—	—	—	—	—	—	—	1	—	1
	F.	5	—	—	—	—	—	1	—	1	1	—	—	—	—	2
Percaine	M.	5	—	—	—	—	—	—	—	—	—	—	—	—	1	4
	F.	11	—	—	—	—	—	—	—	—	1	1	—	2	4	3
Percaine and procaine ...	M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Procaine	M.	8	2	—	—	—	—	—	1	—	1	—	—	—	1	3
Anæsthetic not stated ...	M.	14	—	2	—	—	1	1	—	—	1	—	1	—	2	6
	F.	20	1	—	1	—	—	—	5	1	3	—	2	1	3	3
Total	**M.**	**380**	**24**	**32**	**20**	**7**	**15**	**13**	**9**	**13**	**6**	**21**	**22**	**27**	**66**	**105**
	F.	**348**	**9**	**15**	**16**	**9**	**8**	**13**	**16**	**18**	**30**	**20**	**24**	**25**	**65**	**80**

Table CL.—Deaths, including those of non-civilians, under or associated with the Administration by Inhalation of Certain Anæsthetics, 1928-30, 1931-33, 1934-36, 1937-39 and each year 1940 to 1947.

	Sex	1928–30	1931–33	1934–36	1937–39	1940	1941	1942	1943	1944	1945	1946	1947
Chloroform (1)	M.	189	162	105	68	15	21	17	14	14	8	7	4
	F.	114	104	97	97	16	21	16	14	11	12	6	7
Ether (alone) (2)	M.	355	344	303	253	76	100	64	71	54	58	52	37
	F.	341	312	267	245	69	69	44	50	59	44	38	37
Ether and nitrous oxide (only)	M.	31	54	122	213	82	89	70	89	82	70	56	44
	F.	18	35	104	181	66	68	76	82	71	73	65	50
Chloroform and ether (1) ...	M.	351	320	272	173	39	36	35	26	15	14	15	5
	F.	260	234	194	126	35	24	23	24	9	15	10	6
A.C.E. mixture...	M.	9	17	7	9	1	2	—	—	1	—	—	1
	F.	9	6	9	2	3	—	—	—	—	2	1	1
Ether and ethyl chloride (1) ...	M.	37	83	123	162	41	51	49	43	36	41	39	31
	F.	36	55	111	110	21	38	25	31	36	30	25	21
Other mixtures containing chloroform or ether (3)	M.	19	16	29	37	13	19	28	18	22	20	26	36
	F.	12	30	39	44	13	15	24	25	17	22	21	40
Ethyl chloride (1)	M.	19	18	33	38	10	9	9	21	14	15	19	12
	F.	10	22	24	33	4	5	5	8	10	12	11	17
Nitrous oxide (alone)	M.	68	91	112	131	58	36	39	33	25	34	19	17
	F.	41	73	99	138	47	44	35	33	25	20	15	17

(1) Including combinations with nitrous oxide, as in the corresponding lines of this table in previous years.

(2) The corresponding line of this table in years before 1938 included ether with nitrous oxide, now shown separately.

(3) Including combinations of chloroform or ether with morphia, atropine, nembutal or cocaine derivatives or substitutes.

Deaths associated with chloroform, ether alone and chloroform and ether have become progressively less frequent, while certain others, for example, ethyl chloride, have tended to increase. But variations such as these give no indication of the relative risk of different anæsthetics ; they probably do no more than reflect the changing frequency with which certain anæsthetics or anæsthetic mixtures have been used. As has been pointed out repeatedly in the Statistical Review (e.g. 1940–45 Text, page 277), it is impossible to compare the risks attached to different anæsthetics unless the ratio of deaths to administrations can be ascertained ; and to provide numbers sufficient for reliable comparison to be made this information must be obtained on a national scale. In recent years a number of new anæsthetics have been brought into use. It is most desirable that the continued and even the increased use of these substances should depend not on the narrowly circumscribed experience of individual users, however careful they may be in drawing their own conclusions, but on the broad basis of national experience. In the years 1946 and 1947 there were altogether 1,479 deaths reported as having occurred under or connected with anæsthesia ; of these 944 were associated with inhalation anæsthetics and 534 associated with other forms, including 63 where information about the type of anæsthetic was not obtained. In the absence of knowledge about the relative frequency with which the various anæsthetics are used throughout the country, it is not possible to say whether the excess of deaths associated with inhalation anæsthesia exists because these anæsthetics are still being used more often than the others, because they are used in connection with more serious illnesses or injuries where a fatal outcome under anæsthesia is more likely, or because they are used more often at ages where the risk of any anæsthetic is relatively high. In 1947 there were 74 deaths where ether alone was the anæsthetic, 10 with chloroform alone, 20 with cyclo-propane, and 88 with pentothal ; but from these figures no conclusions can be drawn about the relative risks of these four anæsthetic agents.

Table CLI classifies the deaths associated with anæsthesia in 1946 and 1947 according to the underlying disease to which the death was assigned. Usually, but not necessarily in every case, this would be the disease in connection with which the anæsthetic was given. For cancer the average in 1946–47 was the same as in 1937-39, 120 deaths per year ; for exophthalmic goitre the averages were 22 in 1937–39 and 7 in 1946–47, thus continuing the decrease observed in 1940–45 and attributed to less frequent resort to operative treatment for this disease ; for diseases of the teeth there were 24 in 1937–39 and 11 in 1946–47 ; for ulcer of stomach or duodenum 36 in 1937–39 and 40 in 1946–47 ; for appendicitis 89 and 44 ; for hernia 60 and 47 ; for diseases of prostate 19 and 26 ; for circumcisions eight and ten ; for childbirth and abortion 56 and 37.

Table CLI.—Classification of Deaths, including those of non-civilians, under or associated with Anæsthesia, 1946 and 1947.

International List No.	Cause to which death was assigned	1946		1947	
		Males	Females	Males	Females
13	Tuberculosis of respiratory system	3	3	2	2
14–22	Non-respiratory tuberculosis	4	3	7	3
45–55	Cancer	63	54	67	55
56a, b, c	Non-malignant tumours of female genital organs	—	14	—	12
56d, e	Other non-malignant tumours	8	7	7	7
57	Tumours of undetermined nature	2	2	—	3
61	Diabetes mellitus	—	—	—	3
63a	Simple goitre	1	2	—	3
63b	Exophthalmic goitre	2	3	—	9
88	Diseases of the organs of vision	3	8	4	7
89	Diseases of the ear and of the mastoid antrum	5	3	7	4
98	Gangrene	6	2	8	2
100	Diseases of the veins	2	—	—	—
104	Diseases of the nasal fossæ and annexa	5	3	9	1
106b, pt.	Bronchiectasis	—	—	4	8
110a	Empyema	2	1	—	—
115a	Diseases of the teeth and gums	7	4	6	5
115c	Other diseases of the pharynx and tonsils	11	9	9	7
115 pt.	Other diseases of the buccal cavity	1	—	—	—
117	Ulcer of the stomach or duodenum	34	6	33	7
121	Appendicitis	25	21	27	15
122a	Hernia	33	17	30	14
122b	Intestinal obstruction	24	13	26	18
123	Other diseases of the intestines	5	2	4	5
126	Biliary calculi	4	8	—	6
127	Other diseases of the gall bladder and bile ducts	2	1	2	7
129	Peritonitis	2	1	—	—
130–133	Diseases of the kidney	3	6	2	3
134	Calculi of the urinary passages	2	—	1	4
135–136	Diseases of the bladder or urethra	—	—	4	1
137	Diseases of the prostate	32	—	19	—
138 pt.	Circumcision	11	—	8	—
138 pt.	Other diseases of the male genital organs	1	—	—	—
139	Diseases of the female genital organs	—	8	—	15
140–150	Childbirth and abortion	—	39	—	35
151–153	Diseases of the skin and cellular tissue	4	3	—	—
154–156	Diseases of the bones and joints	9	5	3	3
157	Congenital malformations	23	7	18	12
*163–198	Violence	47	33	48	44
	Other causes	45	33	25	29
	All causes	**431**	**321**	**380**	**349**

* Excluding 1 female death in each year assigned to 195ba, Anæsthetic accidents, which are included with Other causes.

There were 15 deaths under anæsthesia in 1946 and 22 deaths in 1947, where status lymphaticus was reported as having been present. Like all other anæsthetic deaths these were classified primarily to the disease or injury in connection with which the anæsthetic was given. The annual numbers of such deaths during 1940–45 were 32, 37, 39, 45, 21, 21, giving an average of 32·5 per year. The distribution of the deaths in 1946 and 1947 by sex and age was as follows :—

Year	Sex	Deaths including those of non-civilians under Anæsthesia with mention of Status Lymphaticus, 1946 and 1947									
		All ages	0–	5–	10–	15–	20–	25–	35–	45–	55–
1946 ...	M.	13	8	4	—	1	—	—	—	—	—
	F.	2	—	—	2	—	—	—	—	—	—
1947 ...	M.	13	8	3	—	—	1	—	1	—	—
	F.	9	4	1	2	—	1	1	—	—	—

Medical Certification.—In 1927 certain changes were introduced in the procedure of death registration for the purpose of ensuring that when the medical practitioner in attendance upon the deceased had not seen the deceased within 14 days before the date of death, the death could not be registered unless either the practitioner had seen the body after death or the case had been reviewed by a coroner.

An undertaking was given at that time that statistics would be prepared regularly to show to what extent the position in regard to the number of cases seen or not seen after death was altering. Detailed analyses were therefore published in the Reviews for the years 1928 and 1933 and abridged summaries for the years 1929 to 1932 and 1934 to 1937. Table CLII gives an abridged summary for 1947 compared with 1928 and 1933.

In 1947, 60·9 per cent. of total deaths registered were " seen after death ", a substantial increase compared with 1928 (51·0 per cent.), 1933 (53·7 per cent.) and 1937 (not shown in the table, 55·8 per cent.).

These figures suggest that there has been a progressive rise throughout the period from 1928 in the proportion " seen " though there is no evidence as to the state of affairs between 1938 and 1946.

Among the cases " seen after death " those certified by medical practitioners stood in the following ratio to coroners' cases : in 1928, 3·54 to 1 ; in 1933, 3·79 to 1 ; and in 1947, 3·35 to 1.

Table CLII.—Summary of Certification of Deaths, 1928, 1933 and 1947.

	1928		1933		1947	
	Number	Percentage	Number	Percentage	Number	Percentage
Seen after death	234,762	51·0	266,697	53·7	315,341	60·9
Inquest or Coroner's P.M. without Inquest, or other cases reviewed by Coroners*	51,700	11·2	55,635	11·2	72,561	14·0
Cases certified by Medical Practitioners	183,062	39·8	211,062	42·5	242,780	46·9
Not seen after death	223,519	48·5	228,839	46·1	200,582	38·8
No statement	2,108	0·5	929	0·2	1,692	0·3
Total	**460,389**	**100·0**	**496,465**	**100·0**	**517,615**	**100·0**

* These totals include the following numbers of deaths of inmates of mental hospitals : 1928, 9,406 ; 1933, 9,988 ; 1947, 10,491.

SURVEY OF SICKNESS

In January, 1944, the Social Survey of the Central Office of Information began each month to interview different samples of the adult population of England and Wales. Specially trained interviewers visited people in their homes and enquired about the illnesses and injuries that had been suffered during the three previous calendar months. Seven of these monthly surveys were carried out at irregular intervals during 1944, each sample consisting of about 2,500 persons, aged 16–64, selected from different parts of the country in such a way as to secure proper representation of the national population at these ages. In this way a series of records of monthly sickness experience was obtained from October, 1943, to February, 1944, and from April, 1944 onwards.

The value of the survey method of morbidity ascertainment having been established during this initial and experimental period, regular monthly sampling began in January, 1945, the sample being extended to include people aged 65 and over and the total size of the sample being increased correspondingly. Since then a different sample of persons has been visited early each month. Although enquiry was made and results recorded about the individual's health during the three previous months, it was decided in 1946 to utilize, in the main, only the records of the last two of these months, and this practice has been continued since.

Some of the results of the Survey between 1944 and 1947 have been reported in the publications mentioned below :—(1–5).

Publication of results from the Survey was started in the Registrar General's Quarterly Return No. 393, and since then detailed tabulations from October, 1946 onwards have been published in successive Quarterly Returns. Some of the rates and indices that have been brought into use to describe the results of the Survey have been based upon these tabulations, and such rates cannot normally be carried further back than October, 1946. In certain cases, however, special analyses were made to allow the calculation of rates for the period July to September, 1946, in order to extend the period for which a uniform series could be obtained.

Results from the Survey of Sickness during 1946 and 1947 were reviewed in considerable detail in the special study (5), which proposed definitions for morbidity statistics, considered the effect upon recorded sickness experience of such factors as memory, sex, age and season, and compared the prevalence of certain types of illness as indicated by the Survey with that suggested from analysis of Ministry of Food medical certificates for special rations. In view of the publication of that study, it will be unnecessary here to devote as much detailed attention to the results for 1946 and 1947 as would otherwise have been considered necessary. Instead, two tables are given to show the trends of sickness and related occurrences during the two years and the other tables consolidate some of the figures for the year 1947 already published in the Quarterly Returns.

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(1) Stocks, P. (1944). Proceedings of the Royal Society of Medicine XXXVII, No. 10, 593.

(2) Monthly Bulletin of the Ministry of Health and Public Health Laboratory Service :
1944, 3, pp. 46, 70, 93, 194 ;
1945, 4, pp. 30, 80, 119, 198, 244 ;
1946, 5, pp. 60, 131, 201 ;
1947, 6, pp. 4, 123, 194.

(3) Slater, P. (1946). The Social Survey. Survey of Sickness, October, 1943, to December, 1944.

(4) Ministry of Health, Report of the Chief Medical Officer for the years 1939–45 (p. 229), 1945 (p. 102), 1946 (p. 105), 1947 (p. 141).

(5) Stocks, P. (1949). Sickness in the Population of England and Wales in 1944–1947. Studies on Medical Population Subjects No. 2, General Register Office.

Table CLIII.—Persons with new or recurrent illness† in a month per 100 interviewed.

Months of Experience	Serious, moderate or mild				Minor or ill-defined*			
	16–64		65 and over		16–64		65 and over	
	M.	F.	M.	F.	M.	F.	M.	F.
1946								
January–March	6·3	5·9	6·0	7·1	25·6	32·3	19·0	23·0
April–June	3·3	4·1	3·5	5·8	25·7	33·9	21·9	28·2
July–September ...	3·9	3·7	3·2	5·3	24·4	32·9	25·7	30·8
October–December ...	4·8	5·4	5·6	7·2	33·0	39·3	29·7	30·9
1947								
January–March	6·4	6·4	6·5	10·7	30·9	36·6	26·5	27·8
April–June	3·2	3·8	4·1	6·7	23·7	31·3	23·2	28·4
July–September ...	3·1	3·5	2·3	4·4	23·5	30·5	25·7	28·9
October–December ...	4·2	5·0	4·9	9·7	34·9	42·4	34·8	39·1

The definition of ' new ' and ' recurrent ' illnesses are as follow :—

New illness—an illness which " began " at some time during the period and which was not a recurrence as defined below.

Recurrent illness—an attack of illness similar to one experienced previously, any such previous attack having subsided at least one week before the present one began.

† Excluding persons with an injury but no illness.

* Excluding persons who also developed a more serious illness as well as a minor or ill-defined one.

Table CLIII gives the average number of persons who reported having had a new or recurrent illness in a month during 1946 and 1947, per hundred interviewed, distinguishing persons aged 16–64 and those aged 65 and over, according to the severity of the illness. A prolonged spell of exceptionally cold weather during the first three months of 1947 resulted in a somewhat increased incidence of serious, moderate or mild illness during that period, but no definite increase in the amount of minor nor of ill-defined illness reported.

Table CLIV gives, by sex and age, the four principal rates by quarters from July, 1946 to December, 1947. The monthly sickness rate is the number of persons, per hundred interviewed, who reported having some illness or injury during the month in question. The monthly prevalence rate is the number of illnesses and injuries reported as having been experienced in the month by each hundred persons interviewed. The monthly incapacity rate is the number of days away from work said to have been caused by sickness per hundred persons interviewed or, for persons not going out to work, the number of days on which they were prevented by illness from going out of doors. The monthly medical consultation rate is the number of medical attendances to or by a doctor (including medically qualified ophthalmic or other specialists but excluding dentists or attention whilst an in-patient in a hospital) per hundred persons interviewed. The table shows that during the cold spell early in 1947 total sickness and prevalence rates were actually lower than during the last three months of 1946, but that there was a great increase in the number of days of incapacity and of medical consultations reported, especially among elderly

persons. During the first quarter of 1947 elderly women experienced on the average just over 3 days of incapacity (as defined above), and elderly men 2 days of incapacity, per month.

Table CLIV.—Average Monthly Sickness, Prevalence, Incapacity and Medical Consultation Rates per hundred persons interviewed in each quarter, July 1946—December 1947.

Months of experience	16 and over	16–64		65 and over	
	Persons	M.	F.	M.	F.
a. Sickness Rate—					
1946 July–September	67	58	70	76	85
1946 October–December	72	65	74	81	88
1947 January–March	70	63	71	79	86
1947 April–June	64	55	66	76	86
1947 July–September	62	55	64	73	84
1947 October–December	70	62	72	79	88
b. Prevalence Rate					
1946 July–September	143	108	154	162	221
1946 October–December	159	127	169	186	238
1947 January–March	147	117	155	173	227
1947 April–June	132	99	144	158	209
1947 July–September	129	96	140	147	212
1947 October–December	149	114	161	175	231
c. Incapacity Rate					
1946 July–September	72	80	62	120	67
1946 October–December	102	114	86	132	122
1947 January–March	158	146	137	209	319
1947 April–June	84	86	70	147	122
1947 July–September	65	67	54	92	103
1947 October–December	100	97	84	165	163
d. Medical Consultation Rate					
1946 July–September	38	30	39	54	58
1946 October–December	44	40	42	60	61
1947 January–March	47	44	41	65	80
1947 April–June	38	32	37	57	60
1947 July–September	35	32	34	53	47
1947 October–December	41	36	41	47	63

Table CLV gives the distribution of illnesses and injuries according to their severity, distinguishing the results from first and second month interviews. The grade of severity was determined by arbitrary coding rules, depending upon the nature of the ailment and the number of days of incapacity to which it gave rise. The total of 78,293 ailments at ages 16–64 and 18,429 ailments at ages 65 and over represents the aggregation of 69,346 monthly experiences during 1947.

Table CLV.—Distribution of Illnesses and Injuries reported as affecting persons aged 16-64, 65 and over, in 1947, by severity.

	Ages 16–64						Ages 65 and over					
	Serious	Moderate, Mild	Minor	Ill-defined	Total	Per cent. of all ailments	Serious	Moderate, mild	Minor	Ill-defined	Total	Per cent. of all ailments
(a) *According to interviews in the first month after the experience month.*												
Illness — New	69	1,125	5,820	897	7,911	19	33	150	619	118	920	10
Illness — Recurrent	97	319	5,442	3,015	8,873	22	149	44	990	457	1,640	17
Illness — Continued	780	1,199	17,067	4,632	23,678	58	1,122	290	4,465	849	6,726	72
Injury	65	128	353	6	552	1	14	16	52	—	82	1
Total	1,011	2,771	28,682	8,550	41,014	100	1,318	500	6,126	1,424	9,368	100
Per cent. of all ailments	2	7	70	21	100		14	5	66	15	100	
(b) *According to interviews in the second month after the experience month.*												
Illness — New	68	813	3,722	587	5,190	14	27	114	383	67	591	6
Illness — Recurrent	89	294	5,279	3,009	8,671	23	161	61	970	491	1,683	19
Illness — Continued	782	996	16,726	4,538	23,042	62	1,134	247	4,476	857	6,714	74
Injury	59	106	209	2	376	1	17	14	42	—	73	1
Total	998	2,209	25,936	8,136	37,279	100	1,339	436	5,871	1,415	9,061	100
Per cent. of all ailments	3	6	69	22	100		15	5	65	15	100	
(c) *According to interviews in both months.*												
Illness — New	137	1,938	9,542	1,484	13,101	17	60	264	1,002	185	1,511	8
Illness — Recurrent	186	613	10,721	6,024	17,544	22	310	105	1,960	948	3,323	18
Illness — Continued	1,562	2,195	33,793	9,170	46,720	60	2,256	537	8,941	1,706	13,440	73
Injury	124	234	562	8	928	1	31	30	94	—	155	1
Total	2,009	4,980	54,618	16,686	78,293	100	2,657	936	11,997	2,839	18,429	100
Per cent. of all ailments	3	6	70	21	100		15	5	65	15	100	

The distributions of ailments of different grades of severity were practically the same according to first and second month interviews. In each case 9 per cent. of the total ailments reported at ages 16–64 were graded as serious, moderate or mild, and 91 per cent. as minor or ill-defined. At ages 65 and over the proportions were 20 per cent. and 80 per cent. respectively.

The distributions of ailments according to whether they were new, recurrent or chronic illnesses, or were injuries, differed considerably between first and second month interviews, a higher proportion of new to continued illness being reported from first month interviews.

Combining first and second month interviews, 39 per cent. of the ailments reported by persons aged 16–64 were classed as new or recurrent compared with 26 per cent. among the elderly. At both ages 1 per cent. of the ailments reported resulted from injury.

Table CLVI.—Average monthly Sickness, Prevalence, Incapacity and Medical Consultation Rates per 100 persons interviewed, by sex and age, 1947.

	Sex	Age group (l.b.d.)							All ages
		16–	25–	35–	45–	55–	65–	75 and over	
Sickness rates									
New illness (1)	M.	31·4	32·8	32·2	32·7	32·6	31·7	32·6	32·4
	F.	38·3	39·0	41·2	41·7	38·6	39·8	36·9	39·7
Serious	M.	·2	·3	·3	·5	·7	·9	2·4	·5
	F.	·2	·4	·3	·8	1·0	2·8	6·3	1·0
Moderate or mild ...	M.	4·5	4·9	3·7	3·7	3·0	3·1	3·3	3·7
	F.	4·8	4·3	4·3	3·9	3·6	3·9	3·9	4·1
Minor	M.	21·1	24·0	23·7	23·4	23·8	23·2	22·0	23·3
	F.	27·1	27·4	28·6	27·6	27·3	26·3	21·2	27·2
Ill-defined	M.	5·7	4·3	4·5	5·1	5·1	4·5	4·9	4·8
	F.	6·2	7·0	7·9	9·4	6·7	6·8	5·4	7·3
Continued illness (2) ...	M.	17·0	21·5	24·9	29·4	34·3	42·9	48·6	28·0
	F.	19·7	23·3	28·4	33·1	38·7	43·9	52·1	30·7
Injury (3)	M.	2·4	2·1	2·1	1·9	1·4	1·1	1·8	1·9
	F.	1·0	·9	·9	1·2	1·8	1·7	2·0	1·2
Total with some illness or injury (4)	M.	49·6	55·4	57·9	62·9	67·3	75·0	81·5	61·1
	F.	58·2	62·7	69·8	75·2	77·8	84·0	89·2	70·8
Prevalence rate	M.	79·9	95·5	102·2	120·9	132·4	156·5	181·4	113·9
	F.	108·6	129·3	155·3	178·6	185·8	214·2	231·1	160·0
Incapacity rate	M.	80·8	78·1	90·3	120·2	131·6	143·6	179·5	106·0
	F.	84·2	68·4	74·4	107·5	116·4	163·9	202·5	99·9
Medical consultation rate ...	M.	28·9	32·3	30·6	42·0	48·6	53·2	61·0	38·5
	F.	33·1	33·3	35·4	47·1	48·0	55·9	75·5	42·0

(1) Including persons with recurrent attacks of chronic illness.
(2) Without new or recurrent illness.
(3) With or without an illness also and which is occurring in the current month or in a previous month.
(4) i.e., "Sickness rate" as defined in Survey.

Table CLVI gives average monthly sickness, prevalence, incapacity, and medical consultation rates for the year 1947 by sex, at seven separate ages, and distinguishes between persons with new illnesses of different grades of severity. At all ages combined the rates for females were higher than for males, with only two exceptions, persons suffering from injury, and numbers of days of incapacity, a pronounced male excess being present for the former at ages from 16 to 54 and for the latter at ages from 25 to 64. When the principal rates at all ages of males are expressed in terms of the corresponding female rates taken as a hundred, the percentages are :– Sickness 86, prevalence 71, incapacity 106 and medical consultations 92.

The four rates increased progressively in each sex with advancing age, but there were differences in the age-gradient between persons with new and persons with continued illness. The latter increased among elderly persons, whereas the former showed little variation from age to age except in respect of serious illnesses, for which the rates became higher with increasing age, and moderate or mild illnesses which produced higher rates among younger than among older persons.

Tables CLVII, CLVIII and CLIX give distributions of persons interviewed according to (*a*) the number of illnesses, (*b*) the number of days of incapacity and (*c*) the number of medical consultations reported by them in a month.

Table CLVII indicates that more women than men complained of several illnesses in that month and that only 14 per cent. of elderly women suffered no illness. Nevertheless, as Table CLVIII shows, there was little variation between the four groups in regard to the proportions who reported no days of incapacity in the month, which approximated to 90 per cent. of each group. Prolonged incapacity, however, was a feature much more of elderly than of younger persons. Table CLIX shows that about one-seventh of persons aged 16–64 and about one-quarter of older people saw their doctors at least once in the month.

Of the 26,897 men of working age (16–64) who were interviewed, 11,074 reported no sickness in the month. By subtracting these from the totals interviewed it follows that 15,823 men with one or more illnesses in the month experienced 26,653 days of incapacity (1·68 days per man per month), and 9,705 medical consultations (0·61 per man per month). 13,423 (84·8 per cent.) of these men reported no days of incapacity and 714 (4·5 per cent.) had only one, two or three days of incapacity. Less than 11 per cent., therefore, of the men of working age who reported some sickness were incapacitated for as long as four days or more in a month. It follows likewise that 12,213 out of 15,823 men reporting some sickness in a month, or 77 per cent., did not consult a doctor.

Table CLVII.—Distribution of persons aged 16 and over according to number of separate illnesses and injuries experienced in a month, 1947.

No. of illnesses or injuries	Ages 16–64				Ages 65 and over			
	Males	Per cent. of persons interviewed	Females	Per cent. of persons interviewed	Males	Per cent. of persons interviewed	Females	Per cent. of persons interviewed
0	11,074	41·2	10,466	31·7	917	23·2	777	14·2
1	8,246	30·7	9,006	27·3	1,201	30·4	1,373	25·2
2	4,308	16·0	6,295	19·0	950	24·1	1,283	23·5
3	1,982	7·4	3,708	11·2	453	11·5	888	16·3
4	799	3·0	1,925	5·8	251	6·4	604	11·1
5	326	1·2	974	2·9	96	2·4	301	5·5
6 and over	113	0·6	468	2·0	55	2·0	155	4·2
	32		135		16		51	
	17		71		7		23	
Total	**26,897**	**100**	**33,048**	**100**	**3,946**	**100**	**5,455**	**100**

Table CLVIII.—Distribution of persons by sex, at ages 16-64, 65 and over, according to the number of days of incapacity experienced in a month, 1947.

Days of incapacity	Ages 16–64				Ages 65 and over			
	Males		Females		Males		Females	
	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed
0	24,497	91·1	30,240	91·5	3,551	90·0	4,850	88·9
1	210	0·8	235	0·7	16	0·4	19	0·3
2	291	1·1	366	1·1	24	0·6	36	0·7
3	213	0·8	263	0·8	29	0·6	30	0·5
4	129	0·8	170	0·8	25	1·0	38	1·1
5	77		102		14		21	
6	57	1·6	105	1·7	8	1·7	16	1·5
7	343		397		51		54	
8	40		48		7		10	
9	30	0·4	38	0·5	3	0·5	9	0·7
10	98		117		16		27	
11–	352	1·3	382	1·2	53	1·4	89	1·6
18–	185	0·7	242	0·7	37	0·9	62	1·1
25 and over	375	1·4	343	1·0	112	2·8	194	3·6
Total people	26,897	100	33,048	100	3,946	100	5,455	100
Total days	26,653	—	28,849	—	6,053	—	9,634	—

Table CLIX.—Distribution of persons by sex, at ages 16-64, 65 and over, according to the number of medical consultations experienced in a month, 1947.

Medical consultations	Ages 16–64				Ages 65 and over			
	Males		Females		Males		Females	
	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed	Number	Per cent. of persons interviewed
0	23,287	86·6	28,192	85·3	3,095	78·4	4,178	76·6
1	1,461	5·4	2,063	6·3	375	9·5	585	10·7
2	856	3·2	1,168	3·5	206	5·2	297	5·5
3	393	1·5	434	1·3	56	1·4	77	1·4
4	502	1·9	688	2·1	147	3·7	176	3·2
5	106		138		13		24	
6	77		103		11		23	
7	32	1·1	37	1·1	6	1·1	10	1·8
8	55		79		14		38	
9	16		19		1		3	
10–	89	0·4	104	0·4	20	0·6	36	0·8
20+	23		23		2		8	
Total people	26,897	100	33,048	100	3,946	100	5,455	100
Total consultations	9,705	—	12,782	—	2,184	—	3,400	—

The distribution in Table CLVII of men aged 16–64, according to numbers of illnesses recorded in a month, is of special interest in that it approximates remarkably closely to a negative binomial distribution, thus suggesting the existence of "sickness proneness" analogous to the "accident proneness" described by a number of writers (6) (7) (8).

The Table below compares the observed distribution of males at ages 16–64 with three theoretical distributions (*a*) Poisson, (*b*) Negative binomial and (*c*) Double Poisson (9).

Number of Illnesses or Injuries	Observed Distribution		Poisson Distribution		Negative Binomial Distribution		Double Poisson Distribution	
	No. of persons	Per cent.	No. of persons	Per cent.	No. of persons	Per cent.	No. of persons	Per cent.
0	11,074	*41·2*	9,262	*34·4*	11,006	*40·9*	11,017	*40·9*
1	8,246	*30·7*	9,783	*36·7*	8,325	*31·0*	8,413	*31·3*
2	4,308	*16·0*	5,263	*19·6*	4,357	*16·2*	4,188	*13·6*
3	1,982	*7·4*	1,871	*7·0*	1,942	*7·2*	1,940	*7·2*
4	799	*3·0*	499	*1·9*	790	*2·9*	852	*3·2*
5	326	*1·2*	106	*0·4*	303	*1·1*	333	*1·2*
6	113	*0·6*	19	*0·1*	112	*0·6*	113	*0·6*
7	32		3		40		33	
8 or more	17		1		22		8	
Total	26,897	*100*	26,897	*100*	26,897	*100*	26,897	*100*
χ^2			2,307		7·0		2·14	
Degrees of Freedom			7		6		5	
P			<·0001		Between 0·5 and 0·1		<0·001	

Table CLX gives sickness, prevalence, incapacity and medical consultation rates (*a*) by type of occupation of the person interviewed, and (*b*) by the income of the chief wage earner of his family. No correction has been made to the figures to compensate for differences in the age-structure of the various groups. Excluding retired, part-time or unoccupied persons, each of the four rates for men was highest among those engaged in mining and quarrying. Men engaged in agriculture and fishing had the lowest sickness, prevalence and medical consultation rates, but the professional and managerial group had the fewest days of incapacity. Among women, housewives had high sickness, prevalence and medical consultation rates compared with those in other occupations, but their incapacity rate was not unduly high.

(6) Greenwood, M., and Woods, H. (1919), Industrial Health Research Board Report No. 4.

(7) Greenwood, M., and Yule, G. U. (1920), Journal of the Royal Statistical Society, Vol. LXXXIII, No. 2, p. 255.

(8) Chambers, E. G., and Yule, G. U. (1941), Supplement to the Journal of the Royal Statistical Society, Vol. VII, No. 2, p. 89.

(9) Schilling, W. (1947) Journal of the American Statistical Association, Vol. XLII, No. 239, p. 407.

Table CLX.—Mean Monthly Sickness, Prevalence, Incapacity and Medical Consultations Rates per 100 persons interviewed, by occupation of subject and by income of Chief Wage Earner, 1947.

Occupation and Income group	MALES				FEMALES			
	Sickness Rate	Prevalence rate	Incapacity rate	Medical Consultation rate	Sickness rate	Prevalence rate	Incapacity rate	Medical Consultation rate
Occupation of subject								
Manufacturing	59·8	109·8	98·5	34·5	64·1	134·0	131·7	39·4
Transport and public services ...	56·9	98·2	98·3	37·2	56·7	103·1	130·7	37·0
Mining and quarrying	68·7	132·6	182·2	51·4	57·1	157·1	628·6	85·7
Building and roadmaking	55·8	95·7	80·7	26·6	69·6	139·1	60·9	13·0
Agriculture and fishing	52·9	90·6	79·8	22·8	45·6	72·0	23·6	11·0
Distributive	58·1	104·0	72·0	32·6	65·3	117·7	100·6	28·4
Clerical	56·3	97·6	79·8	31·0	57·6	115·3	81·0	32·6
Professional and managerial	58·0	101·4	55·8	29·0	59·0	117·5	84·8	37·7
Other employed persons	56·7	103·1	81·9	32·1	61·9	122·4	66·3	30·0
Housewives	—	—	—	—	73·4	169·6	91·0	41·4
Retired, part-time, unoccupied or unstated	78·6	172·6	213·3	72·6	77·0	190·1	172·9	66·2
Income per week of Chief wage earner								
Under £3	79·4	183·8	200·0	67·6	79·9	201·2	136·2	54·8
£3 but under £4	64·5	123·3	133·0	42·8	70·3	159·2	102·7	39·7
£4 but under £5 . 10 . 0	60·0	109·6	105·4	36·5	69·6	155·2	92·4	37·1
£5 . 10 . 0 but under £10	57·4	101·8	84·8	33·8	68·9	150·6	89·7	41·9
£10 and over	61·1	108·3	70·5	38·6	66·7	140·3	108·1	48·6
Not ascertained	57·6	103·6	88·1	28·8	69·9	152·4	91·8	44·1
Totals	**61·1**	**113·9**	**106·0**	**38·5**	**70·8**	**160·0**	**99·9**	**42·0**

The previous tables have dealt only with total sickness, without regard to the particular disease or condition giving rise to it. Table CLXI gives numbers and percentage distributions of illnesses, days of incapacity and medical consultations according to the nature of the illness or injury responsible, these being grouped into 17 diagnostic categories based on the Medical Research Council's Provisional Morbidity Code ([10]).

Among persons aged 16 and over, ill-defined symptons accounted for 22 per cent. of illnesses and injuries, 9 per cent. of days of incapacity and 11 per cent. of medical consultations, the proportions tending to be higher among women than among men. Of the more definite conditions, nervous complaints contributed 18 per cent. to the total number of ailments reported, rheumatism 12 per cent., colds and influenza 10 per cent. and other respiratory diseases 8 per cent. Colds and influenza gave rise to 19 per cent., and other respiratory diseases to 12 per cent., of the total days of incapacity at ages 16 and over. The main conditions responsible for medical consultations at all ages over 16 were colds and influenza, diseases of skin and cellular tissues, and injuries, each with 9 per cent., and respiratory, nervous and rheumatic conditions, each with 8 per cent. In addition, diseases of the heart and arteries constituted an important cause of incapacity and of medical consultations among elderly persons of each sex.

([10]) MedicalResearch Council Special Report Series No. 248 (1944). A Provisional Classification of Diseases and Injuries for use in compiling Morbidity Statistics.

Table CLXI.—Distribution of Illnesses and Injuries, Days of Incapacity and Medical Consultations by nature of illness or injury, 1947.

Nature of Illness or Injury	Ages 16 and over						Ages 16–64											
	Persons						Males						Females					
	Illnesses or Injuries		Days of Incapacity		Medical Consultations		Illnesses or Injuries		Days of Incapacity		Medical Consultations		Illnesses or Injuries		Days of Incapacity		Medical Consultations	
	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.
1. Colds, Influenza	9,586	10·4	11,032	19·2	1,918	8·9	3,702	13·4	3,977	17·7	828	10·3	4,820	10·2	5,429	23·9	887	9·3
2. Respiratory diseases ...	7,329	8·0	6,883	12·0	1,725	8·0	2,960	10·7	2,358	10·5	605	7·5	3,066	6·5	2,260	9·9	532	5·6
3. Mouth and teeth	2,783	3·0	365	0·6	131	0·6	1,035	3·7	120	0·5	41	0·5	1,596	3·4	233	1·0	83	0·9
4. Acute sore throat	589	0·6	1,241	2·2	371	1·7	182	0·7	394	1·8	148	1·8	354	0·7	824	3·6	211	2·2
5. Ear and mastoid	2,419	2·6	285	0·5	213	1·0	845	3·0	114	0·5	96	1·2	787	1·7	86	0·4	86	0·9
6. Rheumatism, all forms ...	10,936	11·9	3,904	6·8	1,611	7·5	2,663	9·6	1,570	7·0	499	6·2	5,029	10·7	959	4·2	712	7·5
7. Eye affections	3,646	4·0	630	1·1	432	2·0	1,002	3·6	201	0·9	135	1·7	1,671	3·5	167	0·7	203	2·1
8. Heart and arteries ...	3,412	3·7	3,228	5·6	1,346	6·3	601	2·2	849	3·8	274	3·4	1,615	3·4	1,148	5·0	584	6·1
9. Affections of veins ...	2,100	2·3	631	1·1	305	1·4	452	1·6	259	1·2	110	1·4	1,338	2·8	287	1·3	145	1·5
10. Anæmias	776	0·8	392	0·7	345	1·6	39	0·1	—	—	25	0·3	645	1·4	331	1·5	249	2·6
11. Skin and cellular tissue ...	2,689	2·9	2,842	4·9	1,876	8·7	1,099	4·0	1,720	7·6	940	11·6	1,213	2·6	785	3·5	728	7·7
12. Genito-urinary and V.D. ...	868	0·9	1,012	1·8	317	1·5	188	0·7	271	1·2	62	0·8	461	1·0	505	2·2	162	1·7
13. Gastro-intestinal	655	0·7	1,649	2·9	586	2·7	419	1·5	1,156	5·1	416	5·2	165	0·3	364	1·6	98	1·0
14. Nervous complaints ...	16,250	17·6	3,228	5·6	1,725	8·0	4,030	14·6	944	4·2	473	5·9	9,322	19·8	1,613	7·1	1,010	10·6
15. Other defined Illnesses ...	7,212	7·8	10,853	18·9	4,264	19·8	2,258	8·2	4,160	18·5	1,448	17·9	3,696	7·8	4,832	21·2	2,081	21·8
16. Ill-defined symptoms ...	19,899	21·6	5,065	8·8	2,442	11·3	5,640	20·4	1,427	6·3	786	9·7	11,027	23·4	2,115	9·3	1,236	13·0
17. Injuries	1,058	1·2	4,174	7·3	1,936	9·0	552	2·0	2,958	13·2	1,182	14·6	362	0·8	827	3·6	521	5·5
Total	**92,207**	**100**	**57,414**	**100**	**21,543**	**100**	**27,667**	**100**	**22,478**	**100**	**8,068**	**100**	**47,167**	**100**	**22,765**	**100**	**9,528**	**100**

Table CXLI—*contd.*

Nature of Illness or Injury	Ages 65 and over											
	Males						Females					
	Illnesses or Injuries		Days of Incapacity		Medical Consultations		Illnesses or Injuries		Days of Incapacity		Medical Consultations	
	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent.	Number	Per cent
1. Colds, Influenza	457	7·5	607	13·4	85	5·2	607	5·4	1,019	13·3	118	5·1
2. Respiratory diseases ...	606	9·9	1,093	24·1	259	15·8	697	6·2	1,172	15·3	329	14·3
3. Mouth and teeth	69	1·1	—	—	3	0·2	83	0·7	12	0·2	4	0·2
4. Acute sore throat	18	0·3	—	—	1	0·1	35	0·3	23	0·3	11	0·5
5. Ear and mastoid	346	5·6	85	1·9	12	0·7	441	3·9	—	—	19	0·8
6. Rheumatism, all forms ...	1,061	17·3	407	9·0	186	11·3	2,183	19·4	968	12·7	214	9·3
7. Eye affections	346	5·6	144	3·2	45	2·8	627	5·6	118	1·5	49	2·1
8. Heart and arteries ...	395	6·4	494	10·9	194	11·8	801	7·1	737	9·7	294	12·7
9. Affections of veins ...	121	2·0	23	0·5	10	0·6	189	1·7	62	0·8	40	1·7
10. Anæmias	20	0·3	14	0·3	16	1·0	72	0·6	47	0·6	55	2·4
11. Skin and cellular tissue ...	144	2·4	105	2·3	81	4·9	233	2·1	232	3·0	127	5·5
12. Genito-urinary and V.D. ...	97	1·6	80	1·8	38	2·3	122	1·1	156	2·0	55	2·4
13. Gastro-intestinal	36	0·6	41	0·9	28	1·7	35	0·3	88	1·2	44	1·9
14. Nervous complaints ...	809	13·2	214	4·7	102	6·2	2,089	18·6	457	6·0	140	6·1
15. Other defined Illnesses ...	516	8·4	620	13·7	299	18·2	742	6·6	1,241	16·3	436	18·9
16. Ill-defined symptoms ...	1,047	17·1	481	10·6	158	9·6	2,185	19·5	1,042	13·6	262	11·4
17. Injuries	44	0·7	125	2·7	124	7·6	100	0·9	264	3·5	109	4·7
Total	**6,132**	**100**	**4,533**	**100**	**1,641**	**100**	**11,241**	**100**	**7,638**	**100**	**2,306**	**100**

WEATHER OF THE YEAR, ENGLAND AND WALES, 1946

The year 1946 was notably wet, particularly in August, September and November. The heavy rainfall in late summer and early autumn caused serious flooding at times and the harvest suffered considerably in some areas. Other oustanding features were the warm, sunny, dry period during the latter part of March and much of April, the severe thunderstorms of June 23rd and July 2nd–4th and 26th, the quiet, dry October, the unusually warm spell of November 4th–6th and the cold spells in the weeks ending on January 19th, March 3rd and December 21st. A widespread, destructive gale occurred on September 20th ; gusts of 100 m.p.h. and 94 m.p.h. were registered respectively at Scilly and the Lizard.

Mean temperature for the year exceeded the average by 0·3°F. Mild periods included February 1st–20th and most of April and November ; November 4th–6th was exceptionally warm for the time of year (71°F. was registered at Prestatyn on the 4th). Cold spells included January 1st–3rd and 13th–23rd, February 24th–28th and December 15th–21st. Apart from some warm spells in July, the summer months May to August were cool on the whole. Extreme temperatures for the year included 87°F. in London (Camden Square and Kensington) on July 2nd, at Finningley on July 12th, and at Maldon, Essex and Greenwich Observatory on July 24th, 80°F. at Woburn and South Farnborough on December 21st.

The table gives in °F. the monthly deviation from the average mean temperature :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
−1·9	+3·3	−0·5	+3·7	−1·3	−1·1	+0·5	−1·7	+0·9	+0·2	+3·5	−2·5

The general precipitation expressed as a percentage of the average for the period 1881–1915 was 118 ; it was the wettest year over the country as a whole since 1927. Somewhat less than the average occurred in Northumberland and locally in Durham. On the other hand more than 120 per cent. of the average was received in belts extending across the country in a north-east to south-west direction—the largest of these stretched from Yeovil to the Suffolk coast and included two small areas near Salisbury and Bury St. Edmunds with more than 140 per cent. of the average. Among heavy falls of rain in 24 hours or less were 4·03 in. at Lake Vyrnwy and 4·02 in. at Blaenau Festiniog, Merioneth on February 7th ; 2·35 in. in 45 minutes at Cullompton and 2·12 in. in 50 minutes at Salisbury, both falls of very rare intensity, on June 23rd ; 1·97 in. in 35 minutes at Kew Observatory, Richmond, also a fall of very rare intensity, on July 26th ; 3·10 in. at Belford, Northumberland on August 12th ; 3·13 in. at Patcham, Sussex and 3·12 in. at Seaford on August 16th ; 3·15 in. at Chellow Heights Reservoir, Bradford on September 19th and 6·83 in. at Princetown and 5·74 in. at Rhondda Water Works, Glamorgan on November 23rd.

Thunderstorms occurred frequently in the east and north-east ; thunder was recorded on 34 days at Gorleston, 30 at Ipswich and 28 at Cromer and Norwich. The storms of July 2nd–4th were severe and accompanied locally by heavy rain and large hailstones which caused serious damage and flooding locally.

Considerable snowfall occurred in the latter part of February and first part of March. In East Anglia snow occurred from February 20th–22nd ; about 6 in. was reported at Norwich. Snow occurred also in southern England on February 26th ; at Bramley, Hampshire, 4–5 in. fell on that day and at

Tunbridge Wells snow lay to a depth of 8 in. on the morning of the 27th. In March snow lay to a depth of 10 in. at Lympne on the 3rd and about 8 in. at Whipsnade on the 4th.

The table below gives the monthly rainfall expressed as a percentage of the average :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
115	135	58	88	132	138	108	163	193	39	178	101

The duration of bright sunshine was 96 per cent. of the average for the period 1906–35. An outstanding feature was the dullness, apart from July, of the summer and autumn. It should be noted, however, that June was somewhat sunnier than the average in north-east England and July in the eastern half of England and the Midlands. Of the other months, February was very sunny for the time of year in the north of England but mainly dull in Wales and the south of England, April was very sunny, particularly in eastern districts, while December was unusually sunny on the whole compared with the average, although considerable variations occurred at individual stations.

The table gives the monthly sunshine expressed as a percentage of the average :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
99	114	93	126	105	88	103	84	77	76	63	149

1947

From a meteorological standpoint the year 1947 was memorable. Among the outstanding features were the exceptional wintry spell accompanied by persistent easterly winds and considerable snowfall from about January 23rd to mid-March, the serious floods in the latter half of March, the unsettled, wet and stormy April, the hot spell at the end of May and beginning of June, the frequent and sometimes severe thunderstorms from May to July, the exceptionally hot, dry and sunny August, the unusually dry, quiet October and the large and rapid fluctuations of temperature in November.

Mean temperature was not very different from the average, the deviation from the average being +0·4°F. Thus, the exceedingly cold spell which occurred roughly from the last week in January to mid-March was compensated by the mildness of the rest of the year and, in particular, by the exceptional warmth of August.

The table gives in °F. the monthly deviation from the average temperature :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
−3·7	−10·2	−3·5	+1·5	+3·1	+2·6	+1·6	+5·1	+3·1	+1·6	+2·1	+1·2

February was the coldest month on record, apart from February, 1895, since before 1881. August was probably the warmest August on record since before 1881 ; it ranked with the hot Augusts of 1899 and 1911.

The extremes for the year were 94°F. at Waddington, Lincolnshire, and in London, at Camden Square and Kensington on June 3rd and −6°F. at Houghall on March 4th.

The general precipitation expressed as a percentage of the average for the period 1881–1915 was 93. Broadly speaking more than the average occurred in an area extending southward from the extreme north-east over the northern Pennines, in part of north Wales, in extreme south-west Wales, at most places along the south coast from Penzance to Portland Bill and in one or two small

isolated areas elsewhere. Rather more than 120 per cent. of the average was registered at St. Ann's Head, Pembrokeshire and at the Scilly Isles. On the other hand less than 80 per cent. of the average occurred in an area in eastern England from north of Flamborough Head to south of Lowestoft as well as in smaller inland areas in England.

The table gives the monthly rainfall expressed as a percentage of the average :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
113	83	255	143	103	112	95	16	78	20	87	83

A marked feature of the incidence of the rainfall was the large proportion of the year's total which fell in the first six months, namely 62 per cent. This was the more remarkable as normally the total for the last six months is considerably higher than that for the first six months. With regard to individual months March was the wettest March on record, while August was the driest August and October the driest October on record.

Among the heaviest falls in 24 hours or less were 4·53 in. at Wisley, Surrey on July 16th, 3·91 in. at Frodesley Hall, Shrewsbury on July 19th, 4·32 in. at Blaenau Festiniog on November 11th and 4·50 in. at Borrowdale on November 21st.

Thunderstorms occurred frequently in May and rather frequently in June and July. A notably severe thunderstorm occurred in the south-eastern counties on June 27th ; it was associated with a small tornado at Earl's Colne and a violent squall at Croydon. Thunderstorms were widespread and severe locally on July 15th, 16th and 28th ; on the 16th, 4 in. of rain fell in 75 minutes, a " very rare " fall, at Wisley, Surrey. During a thunderstorm in the London area on August 23rd, 3·32 in. of rain fell in approximately 90 minutes at Sudbury, Middlesex also a " very rare " fall.

Unusually heavy snowfall occurred during the period late January to mid-March. On January 30th, level snow lay to a depth of 7 in. at Scilly and the Lizard. By February 4th or 5th a foot or more of level snow lay in parts of Durham, Yorkshire, Lincolnshire and the east Midlands and in many places these conditions persisted with little change throughout the month ; level snow was 53 in. at Forrest-in-Teesdale on February 18th and 25 in. at Huddersfield on February 12th. Heavy snow occurred over much of England and Wales on March 4th and 5th and in north England on March 12th and 13th. Drifts up to 16 ft. occurred in mining towns on high ground near Crickhowell and up to 9 ft. at Whipsnade on March 6th.

The duration of bright sunshine expressed as a percentage of the average for the period 1906–35 was 99, the percentages for the districts ranging from 91 in England, S.W. and S. Wales to 104 in England, E. and 106 in England, N.E.

The table gives the monthly percentages of the average sunshine :—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
103	47	61	102	93	91	88	156	106	108	126	87

February was exceptionally dull ; at some stations it was the dullest February on record. March, too, was unusually dull. Apart from the dullness of February, the outstanding feature was the abundant sunshine recorded throughout the country in August.

The most severe gales of the year occurred on March 16th and April 23rd.

APPENDIX A.—Proportions of the Population of Children under 15 years of age at the end of 1946 and 1947 who had been Immunised against Diphtheria, in different parts of England and Wales. Notification and Death Rates during 1946 and 1947 amongst immunised and non-immunised children.

The detailed analysis of diphtheria immunisation returns which began with the 1945 schedules has been extended to the 1946 and 1947 returns, so that comparison between the three years' results may now be made. (For explanatory notes on diphtheria immunisation returns reference should be made to the Statistical Review of England and Wales for the six years 1940–1945, Text, Vol. I, Medical p. 279.) The returns may be unsuitable for analysis for various reasons of which the following are the chief :—

Returns unsatisfactory in Part A—number of children immunised at different ages.

(1) The numbers of immunised children are given by aggregates instead of for separate ages.

(2) Figures relating to the last six months or to the current year only are given.

(3) War-time evacuees are included in the numbers of immunised children in the case of reception areas, although the children have returned home so that for population purposes they are included in the figures for their home district. This leads to artificially high rates of immunised children in the reception areas and correspondingly low rates in evacuation areas.

Returns unsatisfactory in Part B—numbers of notifications and of deaths with numbers of these known to have been immunised, by age groups.

(1) The column giving the number known to have been immunised is left blank ; this may or may not mean that none of the notifications or deaths occurred among the immunised.

(2) Numbers stated to have been immunised obviously do not relate to the number of notifications or deaths.

For England and Wales the total number of areas rendering satisfactory returns was 1,065 in 1945, 1,016 in 1946 and 916 in 1947. The decrease occurred chiefly in urban districts other than county boroughs in both England and Wales. The total population under 15 covered by satisfactory returns was 7,560,333 in 1945, 7,796,051 in 1946 and 7,073,234 in 1947, and the corresponding percentages of children known to have been immunised were 62, 63 and 61. Table A shows the proportion of children of various ages who had been immunised in each county and type of area, and distinguishes areas not making satisfactory returns. The following table shows similar information for density aggregates of the areas rendering valid returns of numbers of children immunised for each of the years 1945–47.

Aggregates of areas		Number of areas	Per cent. of population immunised at each age :—								
			0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14
ngland											
ounty Boroughs ...	1945	71	8	49	54	58	65	71	73	56	72
	1946	77	4	52	61	61	62	72	73	59	73
	1947	69	6	45	58	60	61	72	74	56	73
London	1945	26	2	45	50	60	60	60	50	53	55
	1946	27	3	50	55	52	54	60	50	53	55
	1947	25	6	52	57	55	51	59	53	54	56
Other Urban Districts	1945	609	3	52	58	62	68	70	70	59	70
	1946	550	3	51	64	64	67	73	72	62	73
	1947	484	5	47	61	65	63	73	72	59	73
Rural Districts ...	1945	276	3	47	58	61	69	73	77	58	75
	1946	263	2	44	56	60	62	71	75	55	73
	1947	250	3	38	57	61	63	72	74	54	73
ngland Total... ...	1945	982	5	49	56	60	67	70	71	57	70
	1946	917	3	50	61	61	64	72	71	59	72
	1947	828	5	45	59	62	61	71	72	56	72
Vales											
County Boroughs ...	1945	4	7	52	62	64	79	76	86	63	81
	1946	4	9	61	67	72	73	84	92	68	88
	1947	4	27	54	69	71	75	83	85	67	84
Urban Districts ...	1945	55	5	56	69	71	85	77	85	69	81
	1946	52	5	57	75	79	83	79	89	73	84
	1947	35	4	50	70	76	80	81	86	68	83
Rural Districts ...	1945	24	6	45	60	62	73	74	81	59	77
	1946	20	2	42	58	63	64	72	79	57	75
	1947	18	5	41	63	70	74	72	79	61	75
Vales Total	1945	83	6	52	65	67	81	76	84	65	80
	1946	99	5	54	68	74	76	79	86	68	82
	1947	88	12	49	67	73	77	79	82	66	81
England and Wales Total	1945	1,065	5	50	56	61	68	71	71	58	71
	1946	1,016	3	51	62	62	64	72	72	60	72
	1947	916	6	46	59	62	62	72	72	57	72

At pre-school ages the percentages of children immunised showed an increase in 1947 over 1945 in London administrative county, the Welsh county boroughs and rural districts, and a decrease in English rural and Welsh urban districts. In each yearly age group under 5 the Welsh county boroughs showed higher proportions than the English in each of the three years and the same is true when the remaining urban districts in each country are compared. In Welsh rural districts the proportions immunised among the one-year olds were lower than those in the English rural districts in both 1945 and 1946, but by 1947 the ratios for the Welsh areas were higher than those for the English ones in each yearly age group under 5. In England in 1945 the proportion immunised at ages over 1 and under 5 were greater in the urban districts than in the county boroughs, (52, 58, 62 and 68 per cent., compared with 49, 54, 58 and 65), while at age 1 the proportion was lowest in the rural districts. In 1946 the proportion in the urban districts was greater than in the county boroughs at ages 2–4 and lowest in the rural districts at each age group under 5. By 1947, the ratio in English rural districts at age 1 was lower than in either of the two preceding years (47, 44 and 28 per cent.) while at ages 2–4 immunisation still lagged behind in the rural districts. In Wales much the same pattern occurred, the proportions in the urban districts being higher than in the county boroughs in 1945 at ages from 1 to 4 and in 1946 and 1947 at ages 2–4. The proportions in the rural districts were consistently lowest in all three years.

Among children of school age the proportions immunised were higher in Wales than in England for each density aggregate and in each year. In 1945 in England the proportions were highest in the rural and lowest in the urban districts; in 1946 and 1947 the rural districts had the lowest proportion at ages 5–9 and the urban districts at 10–14. This may be explained by the fact that many included in the numbers of immunised in rural districts were evacuees from urban districts. In Wales the rural districts showed the lowest proportions in all three years.

With regard to the areas which gave unsatisfactory returns, one of two assumptions can be made, either (*a*) that no children had been immunised except those who figured in the returns or else (*b*) that the proportions immunised in these areas were the same as in the corresponding areas which sent satisfactory returns. The table below shows the estimated limits of proportions of children immunised in density aggregates, including areas which rendered unsatisfactory returns. To obtain the (*a*) lines in this table the numbers stated in the last column of Table A to have been immunised are distributed by age and combined with those in the satisfactory areas. The (*b*) lines in the table show the same percentages as in Table A.

Area	Year		0–	1–	2–	3–	4–	5–9	10–14	Total under 15
England and Wales ...	1945	(*a*)	5·1	49·5	55·1	58·7	65·5	67·0	67·6	59·6
		(*b*)	4·9	49·6	56·5	60·5	67·5	70·7	71·5	62·3
	1946	(*a*)	3·5	51·4	61·0	61·2	63·8	69·4	69·6	60·8
		(*b*)	3·3	50·6	61·6	61·9	64·2	72·1	72·4	62·5
	1947	(*a*)	5·7	46·8	60·4	63·4	62·9	70·5	70·9	61·0
		(*b*)	5·6	45·6	59·4	62·1	61·8	71·7	72·4	61·3
County Boroughs ...	1945	(*a*)	7·8	49·5	54·2	57·8	65·1	70·2	71·5	61·9
		(*b*)	7·7	48·9	54·4	57·8	65·8	71·6	73·2	62·9
	1946	(*a*)	4·3	52·3	61·2	61·0	62·3	72·5	73·7	63·0
		(*b*)	4·2	52·4	61·5	61·4	62·7	73·0	74·2	63·3
	1947	(*a*)	7·0	47·4	61·9	64·3	63·8	73·6	76·0	63·6
		(*b*)	7·2	45·6	58·9	60·5	61·4	72·2	74·7	62·0
London...	1945	(*a*)	2·8	43·1	45·1	52·7	51·9	53·2	44·8	44·9
		(*b*)	2·3	44·5	50·0	60·1	59·5	59·5	50·4	49·7
	1946	(*a*)	4·0	51·4	53·0	49·7	51·4	55·9	46·7	46·3
		(*b*)	3·4	50·4	55·4	52·2	54·2	59·8	50·3	49·1
	1947	(*a*)	6·0	51·4	51·0	48·9	45·4	53·0	46·5	44·9
		(*b*)	5·6	52·2	56·9	55·0	51·1	59·2	52·7	49·8
Other Urban Districts	1945	(*a*)	3·8	51·7	56·8	60·2	67·4	66·9	67·0	59·8
		(*b*)	3·5	51·8	58·6	62·5	69·5	70·5	70·7	62·6
	1946	(*a*)	3·3	53·1	64·3	64·3	68·3	71·0	70·7	62·6
		(*b*)	2·9	51·6	64·8	64·9	68·1	73·8	73·4	64·3
	1947	(*a*)	5·5	48·7	62·1	66·4	65·4	72·9	71·7	62·7
		(*b*)	5·0	47·4	61·2	65·1	63·6	73·5	72·8	62·8
Rural Districts ...	1945	(*a*)	3·7	47·0	55·8	58·7	66·2	66·0	68·9	59·7
		(*b*)	3·6	47·0	57·7	61·3	68·9	73·3	77·1	65·1
	1946	(*a*)	2·3	46·1	56·4	58·9	60·9	65·2	67·5	58·1
		(*b*)	2·3	43·7	56·0	60·0	62·3	70·9	75·2	62·3
	1947	(*a*)	3·7	39·6	57·6	60·9	62·8	66·1	68·6	58·2
		(*b*)	3·5	37·7	56·9	61·5	63·6	71·7	74·7	61·8
England All types of areas ...	1945	(*a*)	5·0	49·4	54·5	58·1	64·6	66·5	66·6	59·0
		(*b*)	4·9	49·4	55·9	60·1	66·7	70·3	70·7	61·8
	1946	(*a*)	3·4	51·2	60·7	60·5	63·1	69·0	68·6	60·2
		(*b*)	3·2	50·4	61·2	61·3	63·6	71·7	71·5	62·0
	1947	(*a*)	5·5	46·8	59·9	62·9	62·0	70·1	70·1	60·4
		(*b*)	5·3	45·4	59·0	61·6	61·1	71·2	71·7	60·8
Wales ... ... All types of areas ...	1945	(*a*)	5·8	51·9	64·6	67·2	80·7	74·7	83·3	70·0
		(*b*)	5·5	52·4	65·2	67·3	80·7	76·3	84·2	70·8
	1946	(*a*)	5·7	54·4	67·5	72·9	75·4	76·7	85·1	71·0
		(*b*)	5·7	54·5	68·8	73·6	76·0	78·9	87·5	72·7
	1947	(*a*)	10·7	47·2	70·3	74·5	79·9	78·5	84·6	71·2
		(*b*)	12·7	49·1	68·2	72·7	76·7	79·8	83·8	71·2

Over the three years, for the whole of England and Wales the proportions reported as having been immunised lie between 60 and 63 per cent., according to the assumption made. In England the limits were 59 and 62 per cent. and in Wales 70 and 73 per cent. For any particular density aggregate there is little variation between the proportions immunised, whichever assumption is made, so that the exclusion of unsatisfactory returns does not vitally affect the resulting statistics.

Part B of the Immunisation Return asks for the number of notifications and deaths at ages 0—, 1—, 2—, 3—, 4—, 5–9 and 10–14, and the number of these which occurred in immunised children. Since quarterly returns of corrected notifications by age are sent to the Registrar General who also receives notice of death, it is possible to deduce the number of notifications and deaths among the non-immunised. In 1945, 1946 and 1947 returns satisfactory in Part B were received covering respectively 4,548,402, 2,190,133 and 2,613,990 immunised and 2,749,947, 1,284,626 and 1,613,579 non-immunised children under 15. The decrease in the two latter years is chiefly due to faulty age recording in the returns.

The total numbers of deaths from diphtheria at ages under 15 registered in England and Wales in 1945, 1946 and 1947 were 584, 351 and 207 respectively, thus showing decreases from the 1945 figure of 40 per cent. in 1946 and 65 per cent. in 1947. In the same years the numbers of corrected notifications were 12,690, 7,953 and 3,792, giving decreases of 37 and 70 per cent. The percentage case fatality rate in the general population under 15 was 4·6, 4·4 and 5·5 in the three years under discussion. Using the figures from satisfactory returns, the case fatality rates among immunised children were 0·88, 0·83 and 1·06 per cent. and among non-immunised 6·5, 5·2 and 8·5. In each year the difference between the percentage case fatality rates in immunised and non-immunised children is statistically significant. ($5{\cdot}60 \pm 0{\cdot}65$; $4{\cdot}34 \pm 1{\cdot}48$; $7{\cdot}41 \pm 1{\cdot}94$.)

The notification rates per 100,000 and deaths per 1,000,000 children either immunised or not immunised before the end of 1946 or 1947 are shown for various ages in different classes of area of England and Wales in Table C. In the table on page 296 similar results are given for the three years 1945 to 1947, for purposes of comparison.

At ages 1–4 in England and Wales the notification rate among the immunised fell from 44 to 16 per 100,000 while among the non-immunised it fell from 244 to 55, the corresponding decreases among children of school age being from 97 to 19 and 372 to 72. Decreases in attack rates at all ages are evident in both immunised and non-immunised children for England and Wales as a whole, and in English county boroughs and urban districts. In the rural districts the rate declined at all ages among the non-immunised and also at ages over 5 among the immunised, whilst among those below the age of 5 a sharp decline from 1945 to 1946 was followed by a slight rise in 1947. In London administrative county the rates for those aged 10 and over declined in both immunised and non-immunised children (54, 48, 23 and 104, 72, 48), while in the lower age groups there was a rise in 1947, following a decrease the year before (34, 12, 25 and 205, 82, 158).

Area	Year	0–		1–		3–		5–		10–14		1–4		5–14		Total under 15	
		I.	Non-I.	I.	Non-I.	I.	Non-I.	I.	Non-I.	I.	Non-I.	I.	Non-I.	I.	Non-I.	I.	Non-I.
England and Wales ...	1945	44	29	24	149	64	389	118	473	75	265	44	244	97	272	82	266
	1946	13	9	13	59	29	120	43	159	33	92	21	85	38	127	33	87
	1947	—	8	9	40	22	74	23	98	15	45	16	55	19	72	18	52
England																	
County Boroughs ...	1945	67	37	38	212	92	507	149	678	88	369	65	338	119	528	105	384
	1946	—	11	17	95	39	200	59	251	41	119	28	142	50	185	44	133
	1947	—	14	12	62	35	122	34	156	21	89	24	88	28	125	26	87
London	1945	—	41	14	149	52	292	66	290	54	104	34	205	61	188	52	168
	1946	—	—	—	39	25	13	40	51	48	72	12	82	44	62	32	53
	1947	—	14	8	141	43	175	45	173	23	48	25	158	35	110	31	104
Other Urban Districts	1945	28	22	17	118	53	317	120	367	81	208	35	197	101	288	82	210
	1946	23	11	15	56	34	110	46	153	33	92	24	79	40	122	35	84
	1947	—	6	7	26	18	50	17	62	11	26	13	36	14	43	14	32
Rural Districts ...	1945	—	12	14	79	40	228	72	259	51	186	27	136	62	226	53	152
	1946	—	5	5	16	5	36	16	53	17	30	5	24	17	43	13	28
	1947	—	5	16	11	9	19	9	40	10	26	12	14	10	33	10	20
Wales																	
All types of areas ...	1945	—	5	19	14	55	579	85	621	45	566	37	291	64	600	57	369
	1946	—	6	9	136	38	191	50	337	56	237	24	158	53	291	45	172
	1947	—	—	—	90	20	125	74	295	40	121	11	102	57	219	45	127

For England and Wales the death rates from diphtheria per million living at ages under 15 were 67, 40 and 23 in 1945 to 1947. For the areas rendering satisfactory returns the death rates among immunised children fell from 7 per million in 1945 to 2 per million in 1947, whilst among the non-immunised the rates fell from 172 to 44 per million. This decrease in death rates among the non-immunised was apparent in all three density aggregates in England (county boroughs 224 to 55, urban districts 170 to 36 and rural districts 92 to 23). In Wales the decline was less marked, the rate being 232 in 1945 and 123 in 1947.

Area	Year	0–	1–	3–	5–9	10–14
England and Wales	1945	0·7	6·2	6·1	4·0	3·5
	1946	0·7	4·5	4·1	3·7	2·8
	1947	*	4·4	3·4	4·3	3·0
England						
County Boroughs	1945	0·6	5·6	5·5	4·6	4·2
	1946	*	5·6	5·1	4·3	2·9
	1947	*	5·2	3·5	4·6	4·2
London	1945	*	10·6	5·6	4·4	1·9
	1946	—	*	0·5	1·3	1·5
	1947	—	17·6	4·1	3·8	2·1
Other Urban Districts ...	1945	0·8	6·9	6·0	3·1	2·6
	1946	0·5	3·7	3·2	3·3	2·8
	1947	*	3·7	2·8	3·6	2·4
Rural Districts	1945	*	5·6	5·7	3·6	3·6
	1946	*	3·2	7·2	3·3	1·8
	1947	*	0·7	2·1	4·4	2·6
Wales						
All types of areas	1945	—	0·7	10·5	7·3	12·6
	1946	—	15·1	5·0	6·7	4·2
	1947	—	—	6·3	4·0	3·0

* With no notifications amongst the immunised the ratios were indeterminate but large.

The above table shows the ratio of notification rates amongst non-immunised and immunised children at successive ages in various aggregates of areas. For those aged 1 and 2 the notification rate among the non-immunised in England and Wales in 1945 was six times that amongst the immunised, but by 1947 it had fallen to $4\frac{1}{2}$ times. At ages 3 and 4 the rate fell from six times as great amongst the non-immunised to $3\frac{1}{2}$ times as great. At ages 5–9 the ratio was 4·0 in 1945, 3·7 in 1946 and 4·3 in 1947, whilst in the last five years of childhood the ratios were 3·5, 2·8 and 3·0. If the ratios at different ages are applied to the corresponding numbers in these age groups in the general population the ratio of notifications amongst the non-immunised to those among the immunised at ages under 15 would be 4·2 in 1945, 3·4 in 1946 and 3·7 in 1947. The risk to a non-immunised child of having an attack of diphtheria was therefore four times as great as to an immunised child in 1945, while in 1947 the chance was about 7 : 2.

Area	Year	1–4	5–14
England and Wales	1945	32	24
	1946	12	25
	1947	12	46
England			
County Boroughs	1945	42	62
	1946	5	*
	1947	*	*
London...	1945	*	*
	1946	—	—
	1947	*	*
Other Urban Districts	1945	55	16
	1946	17	16
	1947	2	30
Rural Districts	1945	9	21
	1946	*	3
	1947	2	*
Wales			
All types of areas	1945	21	34
	1946	*	*
	1947	3	*

* With no deaths amongst the immunised the ratios were indeterminate but large.

The above table gives the ratio of death rates among non-immunised and immunised children at ages 1–4 and 5–14. At pre-school ages the risk of dying among the non-immunised children was 32, 12 and 12 times as great as among the immunised in the three years under review, while among those of school age the risk to non-immunised, which was 24 times as great in 1945, increased to 25 and 46 times in 1946 and 1947 respectively.

Table A (1946).—Proportions of children of Various Ages on 31st December, 1946, who had been Immunised against Diphtheria in each County and Class of Area, according to the Returns made by Local Authorities to the Ministry of Health, with distinction of areas not making valid returns.

County aggregates of areas	Areas rendering valid returns of numbers of children immunised											Areas not rendering valid returns		
	Number of areas	Population under 15 at end of 1946	Total under 15 immunised	Per cent. of population immunised at each age :—										
				0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14			
England															
County Boroughs of															
Berkshire	1	24,176	16,477	0	60	59	59	59	75	88	59	82	—	—	—
Cheshire	4	91,849	53,441	8	38	53	53	54	66	73	50	70	—	—	—
Cumberland	1	14,119	10,119	0	46	75	92	82	87	74	74	80	—	—	—
Derbyshire	1	30,419	19,519	0	33	62	67	61	77	77	56	77	—	—	—
Devonshire	2	56,416	32,613	2	44	51	49	51	69	72	49	71	—	—	—
Durham	5	133,258	81,042	1	55	73	63	60	64	71	63	68	—	—	—
Essex	3	92,306	33,013	1	36	44	37	39	43	37	39	40	—	—	—
Gloucestershire	2	103,770	58,897	1	54	61	55	57	63	66	57	65	—	—	—
Kent	1	4,777	3,119	7	71	55	50	57	73	82	58	77	—	—	—
Lancashire	16	640,625	410,419	6	50	53	62	62	72	78	57	75	1	22,091	17,923
Leicestershire	1	59,073	41,304	3	50	64	72	73	81	84	65	82	—	—	—
Lincolnshire : Lindsey ...	2	34,705	21,070	1	41	45	47	46	72	83	45	78	—	—	—
Norfolk	2	34,152	17,263	0	38	47	44	43	56	67	43	62	—	—	—
Northamptonshire	1	21,596	12,583	0	41	59	59	60	70	68	55	69	—	—	—
Northumberland	2	82,633	52,838	0	37	62	60	62	67	85	55	76	—	—	—
Nottinghamshire	1	65,184	42,567	0	43	62	61	61	75	83	57	79	—	—	—
Oxfordshire	1	22,161	15,923	3	60	71	78	72	82	80	70	81	—	—	—
Somersetshire...	1	14,085	7,603	0	38	51	43	37	70	65	43	68	—	—	—
Southampton	3	109,999	67,781	2	50	55	53	55	73	78	53	75	—	—	—
Staffordshire	6	175,449	115,995	2	43	58	66	79	78	76	61	77	—	—	—
Suffolk East	1	21,845	13,854	1	39	68	66	72	77	72	61	74	—	—	—
Surrey	1	48,316	26,061	—	32	62	55	67	64	60	54	62	—	—	—
Sussex East	3	48,949	22,539	1	51	54	55	52	59	40	53	50	—	—	—
Warwickshire	2	299,964	227,127	6	76	88	73	69	94	77	77	86	—	—	—
Worcestershire	2	28,461	16,812	1	27	44	51	55	79	68	44	74	—	—	—
Yorkshire E.R.	1	70,138	34,565	6	57	56	57	51	57	50	55	53	—	—	—
Yorkshire N.R.	1	36,069	21,828	0	37	53	53	58	72	74	50	73	—	—	—
Yorkshire W.R.	10	391,627	254,332	7	61	64	63	67	73	74	64	74	1	23,508	—
Total	**77**	**2,756,121**	**1,730,704**	**4**	**52**	**61**	**61**	**62**	**72**	**73**	**59**	**73**	**2**	**45,599**	**17,923**
London	**27**	**546,620**	**268,574**	**3**	**50**	**55**	**52**	**54**	**60**	**50**	**53**	**55**	**2**	**43,580**	**4,658**

Table A (1946).—(*contd.*)

County aggregates of areas	Areas rendering valid returns of numbers of children immunised										Areas not rendering valid returns		
	Number of areas	Population under 15 at end of 1946	Total under 15 immunised	Per cent. of population immunised at each age :—									Number of areas	Population under 15 at end of 1946	Total under 15 immunised
				0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14			
England—*continued*															
Urban Districts of															
Bedfordshire	6	41,541	26,598	0	54	60	58	45	72	83	55	78	2	2,204	819
Berkshire	1	4,305	3,204	—	68	77	73	78	74	98	74	86	6	14,988	16,015
Buckinghamshire	8	33,555	22,304	4	47	59	68	81	68	85	63	76	4	6,081	4,503
Cambridgeshire	—	—	—	—	—	—	—	—	—	—	—	—	1	15,304	962
Cheshire	29	114,857	72,131	2	54	68	67	67	70	72	64	71	4	10,715	8,250
Cornwall	—	—	—	—	—	—	—	—	—	—	—	—	20	36,614	11,010
Cumberland	4	12,079	7,543	—	32	58	58	59	73	77	52	75	2	7,061	6,053
Derbyshire	11	53,521	34,735	1	47	68	63	60	73	79	60	76	9	23,038	10,687
Devonshire	12	19,754	13,457	3	56	69	71	67	76	80	66	78	19	27,083	18,772
Dorsetshire	9	31,992	25,017	3	57	73	79	83	86	96	73	91	3	4,782	5,054
Durham	20	130,359	77,708	1	34	60	55	53	69	71	50	70	5	15,643	7,984
Ely, Isle of	—	—	—	—	—	—	—	—	—	—	—	—	5	12,124	1,192
Essex	26	224,919	137,636	2	55	64	60	70	68	71	62	69	6	46,331	17,438
Gloucestershire	8	30,082	19,182	3	44	56	61	63	82	71	56	76	—	—	—
Herefordshire	3	3,055	1,795	2	37	55	54	48	68	75	49	72	3	7,203	5,728
Hertfordshire	16	73,141	51,789	1	49	67	66	59	83	87	60	85	7	15,631	2,918
Huntingdonshire	3	4,227	2,823	—	36	47	48	57	70	96	47	83	3	2,480	1,600
Kent	34	237,487	142,957	1	50	66	62	68	71	65	62	68	4	7,510	5,861
Lancashire	88	328,244	210,894	3	50	60	61	66	76	73	59	75	6	19,943	13,989
Leicestershire	6	25,367	17,166	1	58	54	53	50	79	88	54	84	4	9,765	6,639
Lincolnshire : Holland ...	1	5,374	4,404	1	43	67	94	82	94	95	71	95	1	2,958	2,640
Lincolnshire : Kesteven ...	2	7,291	4,399	0	45	64	51	83	82	56	61	69	2	2,736	90
Lincolnshire : Lindsey ...	6	25,471	17,768	2	72	78	54	75	78	81	70	79	6	7,508	2,771
Middlesex	25	441,885	272,978	4	56	70	68	74	72	64	67	68	1	11,722	9,290
Norfolk	7	10,672	6,956	2	55	71	57	59	76	78	61	77	5	3,669	654
Northamptonshire	8	19,561	13,776	0	51	63	70	66	82	87	62	85	5	6,762	6,109
Northumberland	15	71,431	52,474	3	61	77	76	74	79	88	72	83	1	1,051	—
Nottinghamshire	11	68,395	49,381	2	61	75	73	68	87	80	70	83	3	13,194	13,745
Oxfordshire	—	—	—	—	—	—	—	—	—	—	—	—	7	10,476	8,613
Peterborough, Soke of ...	1	11,476	5,959	0	29	40	44	48	59	68	40	64	—	—	—
Rutlandshire	1	898	608	—	20	13	36	21	95	91	22	94	—	—	—
Shropshire	9	20,791	14,664	1	40	60	66	69	83	88	59	85	6	9,118	8,005
Somersetshire...	9	21,446	14,450	6	54	63	73	56	77	79	62	78	11	21,785	12,038
Southampton	11	55,324	28,774	1	50	58	68	79	54	53	63	54	4	16,775	14,797
Staffordshire	21	138,615	90,748	8	49	59	64	64	73	78	59	76	4	10,430	7,086
Suffolk East	3	10,320	5,495	2	61	72	67	73	60	48	69	54	9	8,476	1,813
Suffolk West	4	7,304	4,931	0	44	57	59	78	83	79	59	81	1	710	1,022
Surrey	27	223,112	147,597	2	53	66	66	71	80	72	64	76	1	8,874	7,057
Sussex East	5	18,704	8,774	4	56	64	62	59	55	38	60	47	5	11,261	8,018

Sussex West	8	30,982	19,803	1	45	55	69	58	73	79	57	76	—	—	—
Warwickshire	8	64,435	38,587	2	53	57	54	53	67	74	54	71	1	2,817	2,606
Westmorland	4	6,676	3,925	1	47	62	70	59	58	73	60	65	—	—	—
Wight, Isle of	5	13,989	8,404	1	34	44	45	54	74	74	44	74	—	—	—
Wiltshire	10	33,328	22,083	11	47	58	63	66	71	85	58	78	3	2,649	2,429
Worcestershire	9	51,454	33,443	2	42	59	61	63	79	76	56	78	2	9,093	6,518
Yorkshire E.R.	4	14,452	8,103	4	45	65	68	77	67	52	64	60	5	6,319	2,817
Yorkshire N.R.	11	41,456	25,014	1	42	72	59	64	71	66	59	69	3	3,235	284
Yorkshire W.R.	41	177,552	109,519	3	52	59	64	66	72	69	60	70	27	66,023	17,828
Total	**550**	**2,960,879**	**1,879,956**	**3**	**51**	**64**	**64**	**67**	**73**	**72**	**62**	**73**	**226**	**522,141**	**281,704**
Rural Districts of															
Bedfordshire	3	14,547	9,821	1	46	58	68	73	82	76	61	79	1	4,620	3,542
Berkshire	—	—	—	—	—	—	—	—	—	—	—	—	11	39,352	33,964
Buckinghamshire	5	25,708	12,991	5	34	34	50	55	42	78	43	60	3	10,914	704
Cambridgeshire	—	—	—	—	—	—	—	—	—	—	—	—	3	15,836	16,548
Cheshire	8	31,334	19,945	1	41	57	55	57	77	78	53	77	2	3,906	946
Cornwall	1	5,295	3,123	1	41	63	46	26	62	83	45	72	10	24,922	5,557
Cumberland	7	28,415	21,862	1	49	65	77	81	86	94	68	90	—	—	—
Derbyshire	4	37,478	20,894	0	40	43	40	49	72	67	43	70	5	33,397	5,768
Devonshire	9	31,753	23,266	5	41	64	74	75	81	92	64	86	8	17,793	338
Dorsetshire	8	18,836	13,966	1	59	64	74	90	82	88	71	85	1	1,107	940
Durham	8	56,626	37,428	2	59	60	55	56	75	80	57	77	2	9,512	20
Ely, Isle of	1	2,965	1,268	2	41	56	60	63	41	44	55	42	3	4,583	34
Essex	10	41,946	27,291	1	35	50	59	65	77	83	52	80	1	3,647	410
Gloucestershire	13	54,217	34,472	2	39	60	57	62	79	73	54	76	2	6,848	847
Herefordshire	8	16,671	9,409	0	24	37	47	52	66	77	40	71	—	—	—
Hertfordshire	9	25,684	15,587	3	45	45	50	51	66	81	48	73	2	5,825	526
Huntingdonshire	2	3,139	1,749	1	24	51	64	58	68	68	49	68	2	3,677	1,473
Kent	12	46,770	24,813	2	52	50	48	53	61	62	51	62	6	16,854	11,226
Lancashire	13	50,346	25,048	9	42	38	38	44	57	61	40	59	2	8,109	4,537
Leicestershire	7	32,141	22,567	0	48	74	77	70	85	77	67	81	2	6,263	5,495
Lincolnshire : Holland ...	1	5,313	4,306	1	51	72	82	88	83	94	73	93	2	10,092	3,044
Lincolnshire : Kesteven ...	1	5,106	3,102	0	51	55	52	56	63	87	48	75	3	11,263	409
Lincolnshire : Lindsey ...	5	14,718	9,824	2	52	67	67	67	76	78	63	77	4	18,558	6,759
Norfolk	12	50,924	33,098	1	44	54	63	63	79	77	56	78	3	10,583	2,220
Northamptonshire	4	12,350	8,901	1	48	59	66	71	84	90	61	87	4	12,879	11,093
Northumberland	—	—	—	—	—	—	—	—	—	—	—	—	11	19,648	15,236
Nottinghamshire	5	29,713	21,633	0	41	77	70	74	81	90	65	86	2	4,000	3,381
Oxfordshire	—	—	—	—	—	—	—	—	—	—	—	—	6	22,928	19,057
Peterborough, Soke of ...	2	2,047	1,155	1	24	36	43	43	62	89	36	75	—	—	—
Rutlandshire	—	—	—	—	—	—	—	—	—	—	—	—	3	3,336	2,527
Shropshire	8	25,952	19,160	0	47	67	72	75	85	89	65	87	2	5,059	4,169
Somersetshire...	11	40,271	26,781	3	43	56	66	60	67	92	56	79	5	12,562	4,390
Southampton	7	35,952	21,696	10	57	63	90	96	66	53	76	60	4	16,940	13,988
Staffordshire	10	44,239	28,063	1	42	59	68	69	73	73	59	73	—	—	—
Suffolk East	1	5,092	3,200	3	56	68	51	57	69	77	58	73	6	19,676	3,322
Suffolk West	5	13,084	8,365	2	39	59	66	60	81	70	56	76	1	1,683	1,812
Surrey	5	29,091	13,447	1	42	54	62	65	52	43	56	48	—	—	—
Sussex East	3	18,135	14,155	0	48	66	78	79	95	93	68	94	2	12,235	8,170
Sussex West	6	29,152	20,887	0	32	58	71	71	86	89	58	87	—	—	—

Table A (1946).—(*contd.*).

County aggregates of areas	Areas rendering valid returns of numbers of children immunised											Areas not rendering valid returns		
	Number of areas	Population under 15 at end of 1946	Total under 15 immunised	Per cent. of population immunised at each age :—										
				0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14		
Rural Districts of														
Warwickshire	7	31,524	18,767	1	49	53	51	52	55	88	51	71	2	4,541	2,638
Westmorland	2	7,483	4,853	1	40	58	71	65	68	83	58	75	—	—	—
Wight, Isle of	1	3,462	2,007	—	30	48	54	53	70	74	46	72	—	—	—
Wiltshire	9	29,565	18,137	0	32	49	52	59	72	80	48	76	3	8,889	8,801
Worcestershire	7	22,817	12,990	5	38	50	50	58	62	73	49	67	1	1,256	90
Yorkshire E.R.	5	15,113	5,767	1	43	56	46	58	50	23	51	37	3	7,143	2,600
Yorkshire N.R.	8	18,427	12,220	4	59	60	62	63	74	80	61	77	12	13,982	1,967
Yorkshire W.R.	10	52,952	23,739	4	44	51	48	43	51	47	47	49	11	43,439	12,026
Total	**263**	**1,066,353**	**661,753**	**2**	**44**	**56**	**60**	**62**	**71**	**75**	**55**	**73**	**156**	**477,857**	**220,574**
ENGLAND TOTAL	**917**	**7,329,973**	**4,540,987**	**3**	**50**	**61**	**61**	**64**	**72**	**71**	**59**	**72**	**386**	**1,089,177**	**524,859**
Wales														
County Boroughs of														
Glamorganshire	3	97,376	74,951	8	61	67	71	73	86	95	68	90	—	—	—
Monmouthshire	1	23,904	16,543	14	59	67	75	71	76	79	68	77	—	—	—
Total	**4**	**121,280**	**91,494**	**9**	**61**	**67**	**72**	**73**	**84**	**92**	**68**	**88**	—	—	—
Urban Districts of														
Brecknockshire	—	—	—	—	—	—	—	—	—	—	—	—	5	3,125	1,283
Carmarthenshire	8	14,090	10,961	3	55	71	80	82	85	94	72	89	1	141	—
Denbighshire	6	14,496	10,696	8	53	64	72	79	89	81	67	85	1	600	530
Flintshire	4	8,459	6,184	4	51	66	80	97	78	87	73	82	3	7,174	4,417
Glamorganshire	17	122,777	90,916	2	52	74	79	81	79	89	72	84	—	—	—
Merionethshire	4	3,152	2,146	5	33	57	61	63	77	84	53	81	1	479	—
Monmouthshire	13	52,979	40,254	11	69	83	82	88	75	89	81	82	5	12,816	6,530
Pembrokeshire	—	—	—	—	—	—	—	—	—	—	—	—	7	9,630	1,319
Total	**52**	**215,953**	**161,157**	**5**	**57**	**75**	**79**	**83**	**79**	**89**	**73**	**84**	**23**	**33,965**	**14,079**

Rural Districts of																
Brecknockshire	3	5,367	2,726	1	26	57	53	64	62	51	50	57	4	3,359	1,315
Carmarthenshire	4	21,331	12,576	0	37	57	62	64	55	79	55	67	—	—	—
Denbighshire	1	14,118	11,077	1	62	66	76	79	91	93	71	92	4	6,440	5,888
Flintshire	2	6,011	4,133	—	50	51	54	70	78	80	56	79	2	8,968	5,951
Glamorganshire	6	41,630	26,756	0	40	58	62	60	75	77	55	76	1	3,331	2,887
Merionethshire	4	4,603	2,897	—	33	61	60	51	71	80	51	75	1	64	—
Monmouthshire	—	—	—	—	—	—	—	—	—	—	—	—	5	8,132	5,142
Pembrokeshire	—	—	—	—	—	—	—	—	—	—	—	—	4	10,159	10,325
Total	**20**	**93,060**	**60,165**	**2**	**42**	**58**	**63**	**64**	**72**	**79**	**57**	**75**	**21**	**40,453**	**31,508**
WALES TOTAL*	**99**	**466,078**	**336,458**	**5**	**54**	**68**	**74**	**76**	**79**	**86**	**68**	**82**	**72**	**98,772**	**66,036**
ENGLAND AND WALES TOTAL*	**1,016**	**7,796,051**	**4,877,445**	**3**	**51**	**62**	**62**	**64**	**72**	**72**	**60**	**72**	**458**	**1,187,949**	**590,895**

* Includes the counties of Wales whose returns did not allow a division into urban and rural.

Table A (1947).—Proportions of Children of Various Ages on 31st December, 1947, who had been Immunised against Diphtheria in each County and Class of area, according to the Returns made by Local Authorities to the Ministry of Health, with distinction of areas not making valid returns.

County aggregates of areas	Areas rendering valid returns of numbers of children immunised											Areas not rendering valid returns		
	Number of areas	Population under 15 at end of 1947	Total under 15 immunised	Per cent. of population immunised at each age :—										
				0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14			
England															
County Boroughs of															
Berkshire	1	24,807	16,838	5	58	75	63	62	72	85	64	79	—	—	—
Cheshire	4	93,306	54,636	13	36	46	56	57	68	74	48	71	—	—	—
Cumberland	1	14,004	10,352	5	64	73	77	89	89	80	75	84	—	—	—
Derbyshire	1	30,046	20,357	0	36	51	67	70	91	81	55	85	—	—	—
Devonshire	2	58,160	35,271	3	49	57	55	56	71	76	54	73	—	—	—
Durham	3	69,950	40,599	1	34	55	66	60	67	71	53	69	2	62,846	44,097
Essex	3	96,096	41,981	3	47	46	47	41	53	47	45	50	—	—	—
Gloucestershire	2	105,915	61,863	3	41	68	66	58	67	68	58	68	—	—	—
Kent	1	5,780	3,113	4	45	64	49	49	63	62	52	62	—	—	—
Lancashire	14	612,672	393,195	11	46	58	56	62	73	80	55	77	3	63,269	47,920
Leicestershire	1	58,828	40,772	0	32	58	67	74	85	90	57	87	—	—	—
Lincolnshire : Lindsey	2	36,039	22,644	3	46	51	48	49	71	87	49	79	—	—	—
Norfolk	2	35,666	18,344	2	39	48	49	46	53	72	45	62	—	—	—
Northamptonshire	1	21,241	13,392	4	50	56	66	66	76	76	59	76	—	—	—
Northumberland	2	79,961	53,894	0	40	59	64	63	75	91	56	83	—	—	—
Nottinghamshire	1	67,046	43,795	0	46	56	64	62	76	84	57	80	—	—	—
Oxfordshire	1	20,481	16,833	6	58	73	79	87	99	97	74	98	—	—	—
Somersetshire	1	15,679	7,850	4	38	43	54	45	56	63	45	59	—	—	—
Southampton	3	114,839	70,892	5	49	63	57	54	71	78	56	74	—	—	—
Staffordshire	4	112,026	75,242	4	48	60	69	78	77	80	63	79	2	65,265	21,449
Suffolk East	1	22,637	14,543	1	43	51	67	65	82	75	56	78	—	—	—
Surrey	1	50,263	28,085	—	39	62	66	56	67	64	55	66	—	—	—
Sussex East	3	53,931	26,043	3	55	57	54	56	59	44	56	52	—	—	—
Warwickshire	1	57,335	29,251	2	36	66	43	47	70	51	47	61	1	252,229	206,430
Worcestershire	2	28,631	16,776	8	34	46	59	53	65	76	48	71	—	—	—
Yorkshire E.R.	1	73,497	38,797	2	54	63	58	59	61	52	58	56	—	—	—
Yorkshire N.R.	1	36,642	22,327	2	38	48	54	54	75	77	48	76	—	—	—
Yorkshire W.R.	9	381,236	241,319	7	49	64	68	65	74	72	61	73	2	42,203	30,123
Total	**69**	**2,376,714**	**1,459,004**	**6**	**45**	**58**	**60**	**61**	**72**	**74**	**56**	**73**	**10**	**485,812**	**350,019**
London	**25**	**540,010**	**268,827**	**6**	**52**	**57**	**55**	**51**	**59**	**53**	**54**	**56**	**4**	**84,642**	**11,650**

England—*continued*

Urban Districts of															
Bedfordshire	5	41,668	25,367	1	50	63	63	56	71	72	58	71	3	3,948	2,127
Berkshire	—	—	—	—	—	—	—	—	—	—	—	—	7	20,258	18,807
Buckinghamshire	7	33,523	21,789	2	46	63	64	69	73	80	60	77	5	7,495	6,217
Cambridgeshire	1	14,609	10,636	6	63	80	90	81	84	80	78	82	—	—	—
Cheshire	23	96,240	59,720	4	43	63	61	65	70	75	57	73	10	33,371	20,139
Cornwall	—	—	—	—	—	—	—	—	—	—	—	—	20	37,103	12,277
Cumberland	5	13,368	8,292	1	40	46	66	66	68	80	54	74	1	5,859	5,097
Derbyshire	10	48,531	30,013	2	38	56	66	57	72	78	54	75	10	29,863	16,066
Devonshire	11	24,551	17,888	3	64	77	87	89	82	77	79	80	20	24,462	8,651
Dorsetshire	7	26,291	18,714	19	47	60	68	75	81	84	62	83	5	10,875	10,878
Durham	22	129,884	77,990	3	41	52	58	54	71	74	51	72	3	15,168	11,108
Ely, Ilse of	1	2,000	1,087	7	74	92	97	95	50	43	89	46	4	9,914	1,088
Essex	25	231,685	145,092	4	52	64	63	59	73	73	59	73	7	50,424	12,243
Gloucestershire	5	24,416	15,522	5	47	56	65	74	73	73	60	73	3	7,547	5,544
Herefordshire	3	3,402	1,827	—	38	52	59	57	56	69	51	63	3	7,886	6,598
Hertfordshire	10	36,002	22,511	3	47	57	63	60	69	77	56	73	13	57,800	41,651
Huntingdonshire	4	3,415	2,155	2	41	55	52	49	77	80	49	78	2	2,970	2,358
Kent	30	227,077	132,960	3	50	59	65	58	69	66	58	67	8	31,893	24,529
Lancashire	72	296,417	185,720	7	45	62	63	63	73	73	58	73	22	62,278	49,907
Leicestershire	6	25,853	17,679	3	53	55	54	55	81	90	54	85	4	9,902	6,536
Lincolnshire : Holland ...	1	5,809	4,451	2	49	62	73	95	91	90	70	90	1	3,280	2,539
Lincolnshire : Kesteven ...	2	7,554	4,862	2	61	74	77	59	88	55	68	72	2	2,862	204
Lincolnshire : Lindsey ...	3	15,274	9,792	1	48	82	86	44	75	71	65	73	9	18,035	11,787
Middlesex	24	410,859	255,612	8	53	63	70	64	73	68	62	70	2	53,729	38,834
Norfolk	5	9,372	5,694	1	29	53	68	53	73	77	50	75	7	5,918	2,109
Northamptonshire	6	19,847	12,744	2	39	57	61	64	77	81	55	79	7	8,984	7,296
Northumberland	12	59,500	42,459	7	54	68	78	74	83	82	68	83	4	13,236	11,052
Nottinghamshire	9	52,458	37,879	4	49	66	71	77	84	88	65	86	5	30,304	16,117
Oxfordshire	—	—	—	—	—	—	—	—	—	—	—	—	7	10,638	8,023
Peterborough, Soke of ...	1	10,605	5,858	2	36	48	48	51	63	72	45	67	—	—	—
Rutlandshire	—	—	—	—	—	—	—	—	—	—	—	—	1	981	618
Shropshire	11	25,737	18,123	1	42	55	71	78	82	86	61	84	4	5,678	4,428
Somersetshire...	10	31,472	16,670	10	29	48	51	53	61	65	44	63	10	15,129	8,206
Southampton	12	63,149	35,204	4	44	54	60	62	64	64	54	64	3	12,056	5,501
Staffordshire	16	101,813	65,359	2	36	54	60	66	78	78	54	78	9	48,198	25,612
Suffolk East	2	12,913	5,730	3	62	65	55	52	48	38	59	44	10	8,208	1,394
Suffolk West	4	8,000	5,204	5	41	44	50	53	80	85	47	83	1	764	1,089
Surrey	25	212,376	142,453	4	53	68	68	68	83	73	64	78	3	27,661	21,788
Sussex East	4	18,351	8,830	1	54	68	64	61	58	40	61	49	6	16,124	10,870
Sussex West	6	28,283	17,709	1	37	60	62	65	71	77	55	74	2	4,524	3,198
Warwickshire	8	60,602	34,940	4	40	57	64	62	61	73	55	67	1	9,502	7,994
Westmorland	4	6,366	4,198	5	65	66	66	72	68	80	67	74	—	—	—
Wight, Isle of	5	15,327	8,577	3	34	48	47	47	69	71	44	70	—	—	—
Wiltshire	10	33,555	21,284	1	48	59	61	64	73	79	58	76	3	4,060	2,046
Worcestershire	7	44,489	30,084	3	44	59	65	67	81	79	58	80	4	17,882	7,850
Yorkshire E.R.	3	16,351	8,847	17	33	48	52	61	74	49	48	62	6	6,070	2,458
Yorkshire N.R.	10	39,886	25,062	3	50	57	79	70	73	69	64	71	4	5,780	2,021
Yorkshire W.R.	37	147,271	82,033	8	37	56	53	55	68	64	50	66	31	100,738	61,877
Total	**484**	**2,736,151**	**1,704,820**	**5**	**47**	**61**	**65**	**63**	**73**	**72**	**58**	**73**	**292**	**859,357**	**526,732**

Table A (1947).—(*contd.*).

County aggregates of areas	Areas rendering valid returns of numbers of children immunised												Areas not rendering valid returns		
	Number of areas	Population under 15 at end of 1947	Total under 15 immunised	Per cent. of population immunised at each age :—									Number of areas	Population under 15 at end of 1947	Total under 15 immunised
				0–	1–	2–	3–	4–	5–9	10–14	1–4	5–14			
England—*continued*															
Rural Districts of															
Bedfordshire	2	8,922	6,224	3	50	89	74	85	68	87	74	77	2	10,456	7,226
Berkshire	4	14,287	9,713	3	44	94	64	60	74	86	64	80	7	26,649	13,500
Buckinghamshire	2	7,926	4,093	7	28	46	44	39	43	87	39	65	6	31,342	10,107
Cambridgeshire	—	—	—	—	—	—	—	—	—	—	—	—	3	16,739	17,542
Cheshire	7	30,901	18,189	2	42	61	65	68	67	67	58	67	3	3,955	3,297
Cornwall	3	13,147	5,481	2	35	50	40	27	41	57	38	49	8	17,545	3,873
Cumberland	6	23,142	17,367	1	44	69	74	82	89	90	66	89	1	5,451	4,611
Derbyshire	5	41,371	26,489	1	34	54	60	51	79	81	49	80	4	30,401	4,426
Devonshire	7	18,543	12,680	2	47	63	73	86	74	83	66	79	10	29,775	17,147
Dorsetshire	8	19,664	13,452	3	49	66	64	73	76	85	63	80	1	2,062	1,548
Durham	8	62,216	40,384	3	35	49	67	52	78	81	51	79	2	3,768	629
Ely, Isle of	1	3,097	1,409	4	47	70	77	81	46	37	68	41	3	4,542	220
Essex	9	38,963	24,745	4	38	49	56	60	75	82	50	78	2	7,478	5,410
Gloucestershire	14	59,101	36,981	2	35	51	63	62	77	74	52	76	1	4,238	3,091
Herefordshire	8	16,723	9,539	—	29	40	45	54	68	75	41	72	—	—	—
Hertfordshire	6	15,116	8,060	3	44	59	49	60	56	65	53	60	5	18,635	11,223
Huntingdonshire	2	4,153	2,134	3	60	67	67	73	57	55	66	56	2	3,274	2,596
Kent	12	44,411	26,323	5	44	58	57	57	70	69	54	70	6	23,345	13,054
Lancashire	11	40,084	24,151	12	32	48	47	50	71	80	44	75	4	20,121	13,528
Leicestershire	5	21,417	14,447	3	46	56	74	78	80	77	63	78	4	18,206	14,749
Lincolnshire : Holland ...	2	9,639	6,923	—	61	84	79	79	81	80	75	81	1	4,406	4,219
Lincolnshire : Kesteven ...	1	5,319	3,155	1	25	46	56	51	75	79	44	76	3	10,931	741
Lincolnshire : Lindsey ...	4	11,647	8,302	1	44	68	75	74	83	86	65	85	5	21,711	13,114
Norfolk	10	44,148	28,921	6	28	48	52	58	77	83	46	80	5	18,692	7,446
Northamptonshire	3	10,079	6,894	2	43	61	69	72	77	84	61	80	5	16,001	12,969
Northumberland	3	6,481	5,233	3	66	77	78	86	93	94	76	94	8	14,639	7,608
Nottinghamshire	3	16,746	11,181	1	41	59	69	68	75	87	59	80	4	17,006	13,995
Oxfordshire	6	25,763	18,411	3	52	79	96	99	74	80	80	77	—	—	—
Peterborough, Soke of ...	2	1,908	1,162	1	46	52	50	56	63	92	51	78	—	—	—
Rutlandshire	—	—	—	—	—	—	—	—	—	—	—	—	3	3,832	2,526
Shropshire	8	22,867	15,384	1	38	61	66	74	76	83	59	79	2	8,523	6,822
Somersetshire...	8	32,887	21,043	7	7	58	69	75	76	80	51	78	8	18,078	9,836
Southampton	6	33,111	22,654	8	56	74	71	77	79	74	69	77	5	23,081	13,600
Staffordshire	8	39,212	24,346	1	32	54	55	63	78	74	50	76	2	6,904	2,729
Suffolk East	—	—	—	—	—	—	—	—	—	—	—	—	7	26,580	3,963
Suffolk West	4	10,876	6,204	10	43	57	61	56	71	60	54	66	2	4,169	1,922
Surrey	4	26,901	12,397	3	35	44	48	55	56	49	45	52	1	3,694	2,448
Sussex East	4	27,435	21,766	6	63	70	83	91	87	94	76	90	1	4,183	846
Sussex West	6	31,803	20,400	—	23	54	58	72	78	79	51	78	—	—	—

Warwickshire	4	19,794	10,429	4	43	62	66	64	51	61	58	56	5	17,196	8,957
Westmorland	2	7,838	5,273	1	63	57	62	73	71	82	64	77	—	—	—
Wight, Isle of	1	3,514	2,057	3	47	51	51	58	73	67	52	70	—	—	—
Wiltshire	12	38,390	24,644	1	31	55	62	67	75	83	53	79	—	—	—
Worcestershire	7	23,914	13,077	2	30	45	51	52	67	67	44	67	1	1,262	475
Yorkshire E.R.	6	17,446	8,887	5	42	59	58	64	66	45	55	55	2	4,537	99
Yorkshire N.R.	4	12,890	8,425	7	56	59	58	69	74	77	60	75	16	21,428	5,739
Yorkshire W.R.	12	76,778	31,335	3	26	46	43	38	49	46	38	47	9	19,869	5,403
Total	**250**	**1,040,570**	**640,364**	**3**	**37**	**56**	**61**	**63**	**72**	**74**	**54**	**73**	**169**	**544,704**	**273,234**
ENGLAND TOTAL	**828**	**6,693,445**	**4,072,815**	**5.**	**45**	**59**	**62**	**61**	**71**	**72**	**56**	**71**	**475**	**1,974,515**	**1,161,635**
Wales															
County Boroughs of															
Glamorganshire	3	98,611	73,028	24	57	71	71	74	84	85	68	85	—	—	—
Monmouthshire	1	23,364	16,951	38	42	64	70	79	80	85	63	82	—	—	—
Total	**4**	**121,975**	**89,979**	**26**	**54**	**69**	**71**	**75**	**83**	**85**	**67**	**84**	—	—	—
Urban Districts of															
Carmarthenshire	3	9,796	7,272	—	37	61	62	78	89	91	59	90	6	4,636	2,229
Denbighshire	4	9,636	6,536	3	47	60	66	81	83	75	63	79	3	5,835	5,208
Flintshire	4	10,700	7,709	4	47	63	72	73	82	90	63	86	3	4,819	1,200
Glamorganshire	12	82,527	60,766	4	53	69	78	79	82	88	69	85	5	38,544	30,234
Merionethshire	3	1,661	1,091	2	64	88	61	79	76	66	72	70	2	1,974	1,212
Monmouthshire	6	17,732	13,441	6	53	90	86	89	80	88	78	84	12	46,387	34,775
Pembrokeshire	3	5,243	2,475	3	29	64	57	66	62	41	53	52	4	4,417	2,773
Total	**35**	**137,295**	**99,290**	**4**	**50**	**70**	**76**	**80**	**81**	**86**	**68**	**83**	**35**	**106,612**	**77,631**
Rural Districts of															
Carmarthenshire	3	18,771	11,790	1	37	63	69	73	60	83	60	72	1	1,616	—
Denbighshire	—	—	—	—	—	—	—	—	—	—	—	—	5	20,524	16,901
Flintshire	3	14,440	10,534	3	33	71	76	72	87	88	62	87	1	1,146	—
Glamorganshire	5	37,094	25,234	5	46	64	73	76	77	79	64	78	2	5,982	5,072
Merionethshire	4	4,385	3,060	20	40	50	68	77	80	85	58	82	1	60	—
Monmouthshire	1	2,807	1,358	0	24	26	42	94	42	73	45	57	4	6,284	2,219
Pembrokeshire	2	3,247	965	4	40	67	51	50	28	17	52	23	2	6,243	3,984
Total	**18**	**80,744**	**52,941**	**5**	**41**	**63**	**70**	**74**	**72**	**79**	**61**	**75**	**16**	**41,855**	**28,176**
WALES TOTAL*	**88**	**379,789**	**266,888**	**12**	**49**	**67**	**72**	**77**	**79**	**82**	**66**	**80**	**83**	**180,251**	**126,256**
ENGLAND AND WALES TOTAL*	**916**	**7,073,234**	**4,339,703**	**6**	**46**	**59**	**62**	**62**	**72**	**72**	**57**	**72**	**558**	**2,154,766**	**1,287,891**

* Includes the counties of Wales whose returns did not allow a division into urban and rural.

Table B (1946).—Numbers and Proportions of Children of Various Ages who on 31st December, 1946, had been immunised against Diphtheria, in English and Welsh density aggregates, excluding areas which did not render valid returns.

		0–	1–	2–	3–	4–	5–9	10–14
Population estimated—								
ENGLAND.	London	56,814	40,483	43,981	40,233	38,484	164,861	161,764
	County Boroughs ...	246,344	197,358	214,418	196,144	187,616	865,248	848,993
	Other Urban Districts	253,796	214,945	233,513	213,612	204,325	929,073	911,615
	Rural Districts ...	84,887	78,107	84,854	77,627	74,246	336,478	330,154
WALES.	County Boroughs ...	10,711	8,199	8,909	8,148	7,793	39,128	38,392
	Other Urban Districts	17,147	15,123	16,426	15,028	14,374	69,580	68,275
	Rural Districts ...	6,621	6,982	7,585	6,938	6,636	29,425	28,873
	*Unspecified	2,793	2,445	2,657	2,430	2,325	11,677	11,458
All areas with valid returns		679,113	563,642	612,343	560,160	535,799	2,445,470	2,399,524
Number immunised—								
ENGLAND.	London	1,956	20,428	24,346	20,989	20,872	98,656	81,327
	County Boroughs ...	9,764	102,804	131,473	119,509	116,837	627,238	623,079
	Other Urban Districts	6,955	110,172	149,796	136,347	136,885	681,507	658,294
	Rural Districts ...	1,918	34,261	47,349	46,411	46,150	238,338	247,326
WALES.	County Boroughs ...	1,012	4,988	5,937	5,857	5,676	32,822	35,202
	Other Urban Districts	811	8,555	12,264	11,947	11,979	55,034	60,567
	Rural Districts ...	156	2,960	4,435	4,369	4,248	21,165	22,832
	*Unspecified	59	1,076	1,720	1,862	1,889	9,689	7,347
All areas with valid returns ...		22,631	285,244	377,320	347,291	344,536	1,764,449	1,735,974
Percentage immunised—								
ENGLAND.	London	3·4	50·4	55·4	52·2	54·2	59·8	50·3
	County Boroughs ...	4·0	52·1	61·3	60·9	62·3	72·5	73·4
	Other Urban Districts	2·7	51·3	64·1	63·8	67·0	73·4	72·2
	Rural Districts ...	2·3	43·9	55·8	59·8	62·2	70·8	74·9
WALES.	County Boroughs ...	9·4	60·8	66·6	71·9	72·8	83·9	91·7
	Other Urban Districts	4·7	56·6	74·7	79·5	83·3	79·1	88·7
	Rural Districts ...	2·4	42·4	58·5	63·0	64·0	71·9	79·1
	*Unspecified	2·1	44·0	64·7	76·6	81·2	83·0	64·1
All areas with valid returns		3·3	50·6	61·6	62·0	64·3	72·2	72·3

* Includes the counties of Anglesey and Caernarvon whose returns did not allow a division into urban and rural.

Table B (1947).—Numbers and Proportions of Children of Various Ages who on 31st December, 1947, had been immunised against Diphtheria, in English and Welsh density aggregates, excluding areas which did not render valid returns.

		0–	1–	2–	3–	4–	5–9	10–14
Population estimated—								
ENGLAND.	London	59,494	47,504	39,814	43,472	40,000	161,807	147,919
	County Boroughs ...	226,367	197,214	165,291	180,483	166,067	731,607	709,685
	Other Urban Districts	246,281	227,166	190,399	207,893	191,289	847,402	825,721
	Rural Districts ...	86,041	85,835	71,939	78,549	72,276	328,876	317,054
WALES.	County Boroughs ...	11,423	9,698	8,128	8,875	8,168	37,806	37,877
	Other Urban Districts	11,887	10,628	8,910	9,728	8,953	44,024	43,165
	Rural Districts ...	6,539	6,512	5,458	5,960	5,481	25,734	25,060
	*Unspecified	3,265	3,036	2,544	2,778	2,557	12,952	12,643
All areas with valid returns ...		651,297	587,593	492,483	537,738	494,791	2,190,208	2,119,124
Number immunised—								
ENGLAND.	London	3,315	24,818	22,648	23,920	20,428	95,768	77,930
	County Boroughs ...	14,011	89,176	96,572	108,343	100,908	523,772	526,222
	Other Urban Districts	12,380	107,294	115,786	134,317	120,196	619,315	595,332
	Rural Districts ...	2,952	32,165	40,632	47,781	45,376	235,701	235,757
WALES.	County Boroughs ...	3,022	5,217	5,628	6,284	6,134	31,510	32,184
	Other Urban Districts	471	5,310	6,275	7,366	7,137	35,819	36,912
	Rural Districts ...	299	2,643	3,442	4,197	4,060	18,480	19,820
	*Unspecified	79	1,374	1,528	1,970	1,964	9,643	8,120
All areas with valid returns ...		36,529	267,997	292,511	334,178	306,203	1,570,008	1,532,277
Percentage immunised—								
ENGLAND.	London	5·6	52·2	56·9	55·0	51·1	59·2	52·7
	County Boroughs ...	6·2	45·2	58·4	60·0	60·8	71·6	74·1
	Other Urban Districts	5·0	57·2	60·8	64·6	62·8	73·1	72·1
	Rural Districts ...	3·4	37·5	56·5	60·8	62·8	71·7	74·4
WALES.	County Boroughs ...	26·5	53·8	69·2	70·8	75·1	83·3	85·0
	Other Urban Districts	4·0	50·0	70·4	75·7	79·7	81·4	85·5
	Rural Districts ...	4·6	40·6	63·1	70·4	74·1	71·8	79·1
	*Unspecified	2·4	45·3	60·1	70·9	76·8	74·5	64·2
All areas with valid returns		5·6	45·6	59·4	62·1	61·9	71·7	72·3

* Includes the counties of Anglesey, Caernarvon, and Radnor whose returns did not allow a division into urban and rural.

Table C (1946).—Comparative Rates of Diphtheria Notifications and Deaths in 1946, per 100,000 children who were returned as having been immunised and as not having been immunised before the end of 1946, at various ages in different classes of area in England and in Wales as a whole.

	0–	1–	3–	5–	10–14	1–4	5–14	Total under 15
ENGLAND and WALES								
Immunised								
Number of children	7,555	294,774	313,461	790,505	783,838	608,235	1,574,343	2,190,133
Number of notifications ...	1	38	91	338	258	129	596	726
Number of deaths	—	2	1	1	2	3	3	6
Rates :—								
Notified cases per 100,000	13	13	29	43	33	21	38	33
Deaths per million ...	—	7	3	1	3	5	2	3
Not immunised								
Number of children	287,980	232,101	177,559	300,407	286,579	409,660	586,986	1,284,626
Number of notifications ...	27	137	213	479	265	350	744	1,121
Number of deaths	5	9	15	22	7	24	29	58
Rates :—								
Notified cases per 100,000	9	59	120	159	92	85	127	87
Deaths per million ...	17	39	84	73	24	59	49	45
County Boroughs (England)								
Immunised								
Number of children	962	60,364	61,609	161,524	157,023	121,973	318,547	441,482
Number of notifications ...	—	10	24	95	64	34	159	193
Number of deaths	—	1	1	—	—	2	—	2
Rates :—								
Notified cases per 100,000	—	17	39	59	41	28	50	44
Deaths per million ...	—	17	16	—	—	16	—	5
Not immunised								
Number of children	64,544	52,903	43,952	66,991	67,198	96,855	134,189	295,588
Number of notifications ...	7	50	88	168	80	138	248	393
Number of deaths	1	3	5	9	1	8	10	19
Rates :—								
Notified cases per 100,000	11	95	200	251	119	142	185	133
Deaths per million ...	15	57	114	134	15	83	75	64
Urban Districts (England)								
Immunised								
Number of children	4,362	153,706	160,750	398,839	389,182	314,456	788,021	1,106,839
Number of notifications ...	1	23	54	184	128	77	312	390
Number of deaths	—	1	—	1	1	1	2	3
Rates :—								
Notified cases per 100,000	23	15	34	46	33	24	40	35
Deaths per million ...	—	7	—	3	3	3	3	3
Not immunised								
Number of children ...	144,920	109,331	84,386	147,454	146,848	193,717	294,302	632,939
Number of notifications ...	16	61	93	225	135	154	360	530
Number of deaths	4	3	7	10	4	10	14	28
Rates :—								
Notified cases per 100,000	11	56	110	153	92	79	122	84
Deaths per million ...	28	27	83	68	27	52	48	44
Rural Districts (England)								
Immunised								
Number of children ...	1,009	54,639	63,588	162,340	170,522	118,227	332,862	452,098
Number of notifications ...	—	3	3	26	29	6	55	61
Number of deaths	—	—	—	—	1	—	1	1
Rates :—								
Notified cases per 100,000	—	5	5	16	17	5	17	13
Deaths per million ...	—	—	—	—	6	—	3	2
Not immunised								
Number of children	56,397	55,534	39,085	65,828	53,359	94,619	119,187	270,203
Number of notifications ...	3	9	14	35	16	23	51	77
Number of deaths	—	1	2	—	1	3	1	4
Rates :—								
Notified cases per 100,000	5	16	36	53	30	24	43	28
Deaths per million ...	—	18	51	—	19	32	8	15

Table C (1946).—(*contd.*).

	0–	1–	3–	5–	10–14	1–4	5–14	Total under 15
London								
Immunised								
Number of children	8	4,167	4,002	7,512	6,238	8,169	13,750	21,927
Number of notifications ...	—	—	1	3	3	1	6	7
Number of deaths	—	—	—	—	—	—	—	—
Rates :—								
Notified cases per 100,000	—	—	25	40	48	12	44	32
Deaths per million ...	—	—	—	—	—	—	—	—
Not immunised								
Number of children	4,824	2,597	2,302	5,907	6,929	4,899	12,836	22,559
Number of notifications ...	—	1	3	3	5	4	8	12
Number of deaths	—	—	—	—	—	—	—	—
Rates :—								
Notified cases per 100,000	—	39	13	51	72	82	62	53
Deaths per million ...	—	—	—	—	—	—	—	—
WALES								
Immunised								
Number of children	1,214	21,898	23,512	60,290	60,873	45,410	121,163	167,787
Number of notifications ...	—	2	9	30	34	11	64	75
Number of deaths	—	—	—	—	—	—	—	—
Rates :—								
Notified cases per 100,000	—	9	38	50	56	24	53	45
Deaths per million ...	—	—	—	—	—	—	—	—
Not immunised								
Number of children	17,295	11,736	7,834	14,227	12,245	19,570	26,472	63,337
Number of notifications ...	1	16	15	48	29	31	77	109
Number of deaths	—	2	1	3	1	3	4	7
Rates :—								
Notified cases per 100,000	6	136	191	337	237	158	291	172
Deaths per million ...	—	170	128	211	82	153	151	111

Table C (1947).—Comparative Rates of Diphtheria Notifications and Deaths in 1947, per 100,000 children who were returned as having been Immunised and as not having been immunised before the end of 1947, at various ages in different classes of area in England and in Wales as a whole.

	0–	1–	3–	5–	10–14	1–4	5–14	Total under 15
ENGLAND and WALES								
Immunised								
Number of children	16,543	338,571	391,029	941,204	926,643	729,600	1,867,847	2,613,990
Number of notifications ...	—	32	85	217	139	117	356	473
Number of deaths	—	2	2	1	—	4	1	5
Rates :—								
Notified cases per 100,000	—	9	22	23	15	16	19	18
Deaths per million ...	—	6	5	1	—	5	1	2
Not immunised								
Number of children	366,923	306,744	225,871	366,530	347,511	532,615	714,041	1,613,579
Number of notifications ...	30	124	168	361	155	292	516	838
Number of deaths	5	16	17	27	6	33	33	71
Rates :—								
Notified cases per 100,000	8	40	74	98	45	55	72	52
Deaths per million ...	14	52	75	74	17	62	46	44

Table C (1947).—(*contd.*).

County Boroughs (England)								
Immunised								
Number of children	3,972	81,165	91,683	217,570	221,325	172,848	438,895	615,715
Number of notifications ...	—	10	32	75	46	42	121	163
Number of deaths	—	—	—	—	—	—	—	—
Rates :—								
Notified cases per 100,000	—	12	35	34	21	24	28	26
Deaths per million ...	—	—	—	—	—	—	—	—
Not immunised								
Number of children	90,355	71,334	54,104	88,560	77,096	125,438	165,656	381,449
Number of notifications ...	13	44	66	138	69	110	207	330
Number of deaths	1	4	4	9	3	8	12	21
Rates :—								
Notified cases per 100,000	14	62	122	156	89	88	125	87
Deaths per million ...	11	56	74	102	39	64	72	55
Urban Districts (England)								
Immunised								
Number of children	8,580	163,252	187,293	451,268	437,091	350,545	888,359	1,247,484
Number of Notifications ...	—	11	33	76	49	44	125	169
Number of deaths	—	—	1	1	—	1	1	2
Rates :—								
Notified cases per 100,000	—	7	18	17	11	13	14	14
Deaths per million ...	—	—	5	2	—	3	1	2
Not immunised								
Number of children	171,128	140,460	103,037	163,812	168,056	243,497	331,868	746,493
Number of notifications ...	10	36	52	101	43	88	144	242
Number of deaths	3	6	8	8	2	14	10	27
Rates :—								
Notified cases per 100,000	6	26	50	62	26	36	43	32
Deaths per million ...	18	43	78	49	12	6	30	36
Rural Districts (England)								
Immunised								
Number of children	2,210	57,295	73,878	186,620	187,774	131,173	374,394	507,777
Number of notifications ...	—	9	7	17	19	16	36	52
Number of deaths	—	2	—	—	—	2	—	2
Rates :—								
Notified cases per 100,000	—	16	9	9	10	12	10	10
Deaths per million ...	—	35	—	—	—	15	—	4
Not immunised								
Number of children	64,146	65,040	43,075	67,535	58,152	108,115	125,687	297,948
Number of notifications ...	3	7	8	27	15	15	42	60
Number of deaths	—	2	1	4	—	3	4	7
Rates :—								
Notified cases per 100,000	5	11	19	40	26	14	33	20
Deaths per million ...	—	31	23	59	—	28	32	23
London								
Immunised								
Number of children ...	1,316	25,311	23,119	49,260	43,247	48,430	92,507	142,253
Number of notifications ...	—	2	10	22	10	12	32	44
Number of deaths	—	—	—	—	—	—	—	—
Rates :—								
Notified cases per 100,000	—	8	43	45	23	25	35	31
Deaths per million ...	—	—	—	—	—	—	—	—
Not immunised								
Number of children ...	29,155	19,855	20,057	34,764	35,097	39,912	69,861	138,928
Number of notifications ...	4	28	35	60	17	63	77	144
Number of deaths	1	3	3	2	1	6	3	10
Rates :—								
Notified cases per 100,000	14	141	175	173	48	158	110	104
Deaths per million ...	34	151	150	58	28	150	43	72
WALES								
Immunised								
Number of children ...	465	11,548	15,056	36,486	37,206	26,604	73,692	100,761
Number of notifications ...	—	—	3	27	15	3	42	45
Number of deaths	—	—	1	—	—	1	—	1
Rates :—								
Notified cases per 100,000	—	—	20	74	40	11	57	45
Deaths per million ...	—	—	66	—	—	38	—	10
Not immunised								
Number of children	12,139	10,055	5,598	11,859	9,110	15,653	20,969	48,761
Number of notifications ...	—	9	7	35	11	16	46	62
Number of deaths	—	1	1	4	—	2	4	6
Rates :—								
Notified cases per 100,000	—	90	125	295	121	102	219	127
Deaths per million ...	—	99	179	337	—	128	191	123

APPENDIX B.—Abridged Life Tables, 1946 and 1947.—England and Wales.
(Civilian Populations.)

Age x	Males		Females	
	l_x	$\overset{o}{e}_x$	l_x	$\overset{o}{e}_x$
	1946			
0	10,000	64·53	10,000	69·38
1	9,517	66·79	9,629	71·05
2	9,482	66·04	9,597	70·28
3	9,463	65·17	9,581	69·40
4	9,447	64·28	9,568	68·49
5	9,433	63·37	9,558	67·56
10	9,388	58·67	9,522	62·81
15	9,347	53·91	9,491	58·01
20	9,276	49·31	9,436	53·33
25	9,154	44·93	9,352	48·79
30	9,058	40·38	9,262	44·24
35	8,952	35·83	9,168	39·66
40	8,825	31·31	9,058	35·12
45	8,639	26·93	8,915	30·64
50	8,339	22·81	8,701	26·33
55	7,889	18·96	8,407	22·16
60	7,224	15·48	7,985	18·20
65	6,289	12·41	7,348	14·57
70	5,132	9·64	6,438	11·27
75	3,753	7·27	5,123	8·52
80	2,243	5·48	3,482	6·36
85	989	4·26	1,841	4·80
	1947			
0	10,000	64·45	10,000	69·32
1	9,537	66·57	9,638	70·92
2	9,496	65·85	9,603	70·17
3	9,475	65·00	9,585	69·30
4	9,460	64·10	9,574	68·38
5	9,448	63·18	9,564	67·45
10	9,399	58·50	9,528	62·70
15	9,362	53·72	9,499	57·88
20	9,286	49·14	9,442	53·22
25	9,192	44·62	9,356	48·68
30	9,100	40·04	9,267	44·13
35	9,000	35·46	9,176	39·54
40	8,875	30·92	9,069	34·98
45	8,694	26·51	8,927	30·49
50	8,394	22·37	8,723	26·15
55	7,934	18·53	8,426	21·98
60	7,254	15·03	8,003	18·01
65	6,285	11·96	7,380	14·32
70	5,088	9·18	6,467	10·99
75	3,637	6·85	5,115	8·23
80	2,107	5·01	3,419	6·08
85	851	3·71	1,746	4·50

These abridged life tables are constructed from the estimated civilian populations in 1946 and 1947 and the civilian deaths registered in those years.

The column headed l_x shows the numbers who would survive to exact age x out of 10,000 born who were subject throughout their lives to the death probabilities indicated by the 1946 and 1947 death records. Column $\overset{o}{e}_x$ is the "expectation of life", that is, the average future lifetime which would be lived by a person aged exactly x, if likewise subject to these death probabilities.

APPENDIX C.—Medical Statistics Branch of the General Register Office 31st December, 1947.

Administrative :	A. E. Joll (Assistant Secretary)
	L. M. Feery (Principal)
Professional :	P. Stocks, M.A., M.D. (Chief Medical Statistician)
Executive :	W. A. Rolph (Senior Executive Officer)
	Miss E. M. Brooke (Senior Executive Officer)
	C. E. Horton (Higher Executive Officer)
	H. G. Corbett (Higher Executive Officer)

APPENDIX D.—Committees* on which the Registrar General was represented during the years 1946 and 1947 included the following :—

Accidents in the Home,
Standing Inter-Departmental Committee.

Berks, Bucks and Oxon Regional Hospitals Council,
Bureau of Health and Sickness Records, Advisory Sub-Committee on.

Cancer, British Empire Campaign,
Clinical Research, Committee on.

Joint Causes of Death,
U.S.A. Committee on.

Medical Research Council,
Statistics Committee.

Ministry of Health,
Hospital Records, Sub-Committee on.

Official Statistics,
Consultative Committee on.

Population, Royal Commission on,
Biological and Medical Committees.

Radium Commission,
Statistics Committee of.

Rheumatism, Empire Council,
Scientific Advisory Committee.

Royal College of Physicians,
Nomenclature of Diseases Committee.
Tuberculosis, Prophit Research Committee on.

Royal Society of Medicine,
Epidemiology and State Medicine Section Council.

Royal Statistical Society Council.

World Health Organization,
Expert Committee for the preparation of the Sixth Decennial Revision of the International Lists of Diseases and Causes of Death.

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* A list of the committees on non-medical subjects will be published in the Registrar General's Statistical Review for the two years 1946 and 1947, Text, Vol. II, Civil.

APPENDIX E.—United Kingdom Medical Advisory Committee on the Sixth Decennial Revision of the International List of Causes of Death.

Sir Ernest Rock Carling, F.R.C.S., F.R.C.P. (*Chairman*).
Professor A. Bradford Hill, D.Sc., Ph.D.
*W. H. Bradley, Esq., D.M., M.R.C.P.
Professor A. W. M. Ellis, O.B.E., M.A., D.M., F.R.C.P.
Professor N. Hamilton Fairley, C.B.E., M.D., F.R.S., F.R.C.P.
Charles F. Harris, Esq., M.D., F.R.C.P.
Sir Eardley Holland, M.D., F.R.C.S., F.R.C.P., F.R.C.O.G.
Aubrey J. Lewis, Esq., M.D., F.R.C.P.
*Melville Mackenzie, Esq., C.M.G., M.D.
A. H. T. Robb-Smith, Esq., M.A., M.D.
Percy Stocks, Esq., M.A., M.D.
Professor Sydney Smith, C.B.E., M.D., F.R.S.E., F.R.C.P.E.
Professor W. W. D. Thomson, M.D., F.R.C.P.

*W. H. Bradley, Esq., replaced Melville Mackenzie, Esq., after the first meeting of the Committee.

Alternate :

H. S. Stannus, Esq., M.D., F.R.C.P., attended as an alternate at those meetings when Professor Hamilton Fairley was abroad.

Secretary :

L. M. Feery, Esq., General Register Office.

The following also served on Sub-Committees or advised on certain sections of the Classification :—

W. Gissane, Esq., F.R.C.S.
Sir Archibald Gray, C.B.E., M.D., F.R.C.P., F.R.C.S.
H. E. Harding, Esq., F.R.C.S.
Professor R. E. Lane, M.D., F.R.C.P.
Hon. W. S. Maclay, O.B.E., M.D., D.P.M.
S. P. Meadows, Esq., M.D., F.R.C.P.,
Clifford Morson, Esq., O.B.E., F.R.C.S.
Professor H. Stobie, F.R.C.S., L.D.S.

APPENDIX F.—Membership of International Committees concerned in the preparation of the International Statistical Classification of Diseases, Injuries and Causes of Death.

(*a*) *Anglo-United States-Canadian Working Party.*

Halbert L. Dunn, M.D. (*Chairman*), United States Bureau of the Census.
Y. Biraud, M.D., Epidemiological Intelligence Service, League of Nations.
Selwyn D. Collins, Ph.D., United States Public Health Service.
W. Thurber Fales, Sc.D., Baltimore City Health Department.
Iwao M. Moriyama, Ph.D., United States Bureau of the Census.
Winifred O'Brien, R.N., Dominion Bureau of Statistics, Canada.
A. H. T. Robb-Smith, M.D., Secretary, Medical Research Council Committee on Hospital Morbidity Statistics.
Percy Stocks, M.D., General Register Office, London.

(*b*) *World Health Organization Interim Commission, Committee of Experts.*

Percy Stocks, M.D. (*Chairman*), General Register Office, London.
W. T. Fales, Sc.D. (*Vice-Chairman*), Baltimore City Health Department, John Hopkins University, Baltimore, U.S.A.
Julia E. Backer, Sc.D., Central Bureau of Statistics, Norway.
S. T. Bok, M.D., University of Leiden and Institute for Preventive Medicine, Leiden, Netherlands.
D. Curiel, Dr. P. H., Ministry of Health and Social Welfare, Venezuela.
P. F. Denoix, M.D., Institut National d'Hygiène, Paris.
K. Kacprzak, M.D., State School of Hygiene, Warsaw, Poland.
J. Wyllie, M.D., Queen's University, Kingston, Ontario, Canada.

Adviser :

H. L. Dunn, M.D., National Office of Vital Statistics, U.S.A.

Secretariat :

Marie Cakrtova, M.D., World Health Organization, Interim Commission.
J. T. Marshall, Dominion Bureau of Statistics, Canada.

Sub-Committee on Index :

S. D. Collins, Ph.D. (*Chairman*), United States Public Health Service.
I. M. Moriyama, Ph.D., United States Public Health Service.
Winifred O'Brien, R.N., Dominion Bureau of Statistics, Canada.
A. H. T. Robb-Smith, M.D., University of Oxford, England.
J. T. Marshall (*Secretary*), Dominion Bureau of Statistics, Canada.

DISEASES AND CAUSES OF DEATH

INDEX

to this volume and the Parts I (Medical) of the Statistical Reviews for the years 1946 *and* 1947.

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,, 6, 21, 21A and 23	b
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† For 1947, see also Appendix table showing distribution by *Standard* regions.

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Death rates under 4 weeks :		
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* See list of general tables at head of index.
† For 1947, see also Appendix table showing distribution by *Standard* regions.

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‡Bones (55b)	166	c
§‡Brain and other parts of nervous system (54)	173	c, 8
§Glioma (54a)	173	c
Sarcoma (54b)	173	a
§‡Breast (50)	166	c, 8, 24†
Death rates of females :		
Regions by age, 1947	169	—
Regions by age per 1,000 total cancer deaths, 1940–47	172	—
Bronchus (see Lung, bronchus and pleura)		
§Buccal cavity and pharynx (45) (see Mouth and Œsophagus)		
Cæcum (46c, pt.)	146, 150	—
Colon (46c, pt.)	146, 150	—
Digestive organs and peritoneum (46)	146, 150	c, 8
Duodenum (46b, pt.)	146, 150	—
Ethmoid, nose	147, 151	—
§‡Gall bladder and ducts (46e, pt.)	164	—
Genital organs, female (except uterus) (49)	147, 153	c, 8
Genital organs, male (51)	147, 151	c, 8
Glioma of brain and nervous system (see Brain)		
Hepatic and splenic flexures (46c, pt.)	146, 150	—
§‡Intestines other than duodenum or rectum (46c)	164	c
Jaw (45c, pt.)	146, 150	—
§‡Kidney (52 pt.)	166	—
(Death rates from 1931 only)	161	—
Large intestines (see Colon)		
§‡Larynx and trachea (47a)	165	c
§‡Lips (45a)	163	c
§‡Liver (46c, pt.)	164	—
Liver and biliary passages (46e, pt.)	146, 150	c
Lung and pleura (47b)	146, 151	c, 24A†
§‡Lung, bronchus and pleura (47b, pt.) (See also Mediastinum, excluded here)	165	—
§‡Mediastinum (47b, pt.)	166	—
Mouth (45c, pt.)	146, 150	—
Cancer and other malignant tumours (45-55)—*contd.*		
Mouth and Œsophagus (45, 46a)	146, 150	24† (Males) 24A† (Females)
Death rates : regions, by sex per 1,000 deaths from all cancers, 1940–47	170	—
‡Mouth and tonsil	163	—
Nose and nasal cavity (55d : 1)	—	a
§‡Œsophagus (46a)	163	c
§‡Ovary and Fallopian tube (49, pt.)	166	—
§‡Pancreas (46f)	164	c
‡Penis (51c, pt.)	147, 151	—
‡Peritoneum (46g)	146, 150	c
‡Pharynx (45c, pt.)	146, 150	—
Pleura (see Lung, bronchus and pleura)		
§‡Prostate (51b)	166	c
§‡Rectum (46d)	164	c
Respiratory system (47)	146, 151	c, 8 24A†
Death rates : regions, by sex per 1,000 deaths from all cancers, 1940–47	171	—
Scrotum (51a)	147, 151	c
Sigmoid flexure (46c, pt.)	146, 150	—
§‡Skin (53)	166	c, 8
Small intestine (46c, pt.)	146, 150	—
Stomach (46b, pt.)	146, 150	—
§‡Stomach and duodenum (46b)	164	c, 24†
Death rates :		
Comparative mortality in county boroughs, 1921–39	169	—
Regions by age and sex, 1947	168	—
Regions by age and sex per 1,000 deaths from all cancers, 1940–47	171	—
‡Testis (51c)	147, 151	c
§‡Tongue (45b)	163	c
Tonsil (45c, pt.)	146, 150	—
Urinary organs (52)	147, 151	c, 8
§‡Uterus (48)	166	c, 8, 24†
Death rates :		
Regions by age, 1947	169	—
Regions by age per 1,000 total cancer deaths	172	—
Uterus, cervix (48a)	147, 153	c
Uterus, corpus (48b, pt.)	147, 153	—
Uterus, not defined as cervix (48b)	147, 153	—
‡Vulva and vagina (49, pt.)	147, 153	—
Carbuncle, boils (151)	—	c
Carcinoma (see **Cancer**)		
Cardiovascular degeneration (93c : 1)	199	c
Death rates : age and sex, 1931 to 1947	200	—
Cellulitis, acute abscess (152)	—	c, 22
Cerebral embolism, thrombosis and softening (83b, c)	—	c
Death rates : age and sex, 1931 to 1947	195	—
Cerebral hæmorrhage (83a)	—	c
Death rates : age and sex with C.M.Is., 1931–47	194	—
Cerebro-spinal (meningococcal) meningitis (6)	75	c, 8, 9, 10, 11, 12, 15†, 22, 24†, 26–29, App. A

* See list of general tables at head of index.

† For 1947, see also Appendix table showing distribution by *Standard* regions.

§ Numbers of deaths in 1946 and 1947 are given, or can be aggregated, (1) in Table LXXXVII by sex and type of cancer (and are expressed as percentages of all cancer deaths), and (2) in Table LXXXVIII by sex at 15 groups of ages.

‡ Death rates are given by age and sex in Table LXXXIX for 1911–47.

Diseases, Causes of Death and International List Nos.	Text Volume Page No.	Part I Table No.*
Cerebo-spinal—*contd.*		
Death rates :		
Age and sex, 1911–47...	76	—
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Ages 5–9, 10–14, 1936–39, 1941 to 1947 (with non-meningococcal meningitis (81))	59	—
Notifications :		
1939 to 1947	76	—
Degree of diagnosis correction ...	72	—
Notification rates :		
1931 to 1947	76	—
Age and sex, 1946 and 1947	78	—
Regions, 1944 to 1947	77	—
Fatality rates :		
1931 to 1947	76	—
Age and sex, 1946 and 1947	78	—
Regions, 1944 to 1947	77	—
Chickenpox (see **Varicella**)		
Childbearing (see **Pregnancy, childbearing, etc.**)		
Cholecystitis without record of biliary calculi (127a)	—	c
Cholera (4) ... ... (No cases reported)	—	a
Chorea (87a)	—	b
Age and sex, 1946 and 1947	175	—
Circulatory system, diseases of (90-103) ...	199	c, 24†
Cirrhosis of liver (124) (with and without mention of alcoholism)	191	c, 24A†
Cirrhosis and other diseases of the liver (124, 125)	—	c, 22
Cleft palate, harelip (157f)	—	b, 22
Congestion of lungs (see **Lungs**)		
Continued fever (see **Fever**)		
Convulsions in children under 5 years of age (86)	194	b, 11, 12, 15†, 22
Death rates :		
Ages 1–4, 1936–39, 1941 to 1947 ...	57	—
Ages under 1 year :		
1936–39, 1940 to 1947	30	—
Legitimacy and sex, 1946 and 1947	46	—
Regions, 1946 and 1947	48	—
Coronary arteries, diseases of, angina pectoris (94)	199	c, 24A†
Death rates : age and sex, 1931 to 1947	199	—
Cretinism (see **Myxœdema and cretinism**)		
Cystic disease of kidney (157h)	—	b, 22
Cystitis of the bladder (135a)	—	c
Debility, congenital (158)	—	b, 11, 12, 13A, 15†, 22
Death rates under 1 year :		
Age and sex, 1946 and 1947	42	—
Regions, 1946 and 1947	48	—
Death rates under 4 weeks :		
1936–39, 1940 to 1947	30	—
Diabetes mellitus (61)	179	c, 8, 9, 24† App. A
Diabetes mellitus (61)—*contd.*		
Death rates :		
Age and sex with C.M.Is., 1931 to 1947	180	—
Age and sex expressed as percentages of previous periods, 1923–47 ...	181	—
Ages 50–54, 55–64, by sex, 1936–38, 1943–47	64	—
Ages 65–69, 70 and over, by sex, 1936–38, 1943–47	65	—
Regions, age and sex, 1947	181	—
Diarrhœa (see **Enteritis**)		
Digestive system, diseases of (115-129) ...	209	c, 8, 24†
Death rates :		
Ages 50–54, 55–64, by sex, 1936–38, 1943–47	64	—
Ages 65–69, 70 and over, by sex, 1936–38, 1943–47	65	—
Diphtheria (10)	83	c, 8, 9, 10, 11, 12, 22, 24†, 26–29
Death rates :		
Age, 1906–47	83	—
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Ages 5–9, 10–14, 1936–39, 1941 to 1947	59	—
Regions at ages 0–4, 5–14, 1938–47 ...	85	—
In 25 large towns, 1946 and 1947 ...	89	—
Notifications :		
In 25 large towns, 1946 and 1947 ...	89	—
Degree of diagnosis correction ...	72	—
Notification rates :		
Age and sex, 1944 to 1947	86	—
Regions (at ages 0–4 and 5–14), 1944 to 1947	87	—
In 25 large towns, corrected and uncorrected, 1946 and 1947 ...	89	—
Ages 0–4 and 5–14, 1946 and 1947 ...	91	—
Fatality rates :		
Age and sex, 1944 to 1947	86	—
Regions, 1940–47	87	—
Immunisation	292	—
Diverticulitis (123a)...	—	c
Duodenum, ulcer of (117b)...	210	c, 8, 24†
Death rates :		
Age and sex with C.M.Is., 1931–47 ...	210	—
Ages 45–64, 65 and over, sex, region, 1947	212	—
Dysentery (27)	111	b, 22
Deaths :		
According to type, 1931 to 1947 ...	111	—
Notifications :		
Numbers and ratio to deaths, 1931 to 1947	111	—
Degree of diagnosis correction ...	72	—
Notification rates :		
Age and sex, 1944 to 1947	112	—
Fatality rates :		
Age and sex, 1944 to 1947	112	—
Ear and mastoid antrum, diseases of (89)...	198	c, 8, 11, 12, 22, 24A†
Death rates :		
Age and sex with C.M.Is., 1931–35, 1936 to 1947...	198	—
Ages 1–4, 1936–39, 1941 to 1947 ...	57	—
Ages 5–9, 10–14, 1936–39, 1941 to 1947	59	—
Eclampsia of pregnancy ; Eclampsia, puerperal ; Ectopic gestation (see **Pregnancy, childbearing, etc.**)		

* See list of general tables at head of index.

† For 1947, see also Appendix table showing distribution by *Standard* regions.

Diseases, Causes of Death and International List Nos.	Text Volume Page No.	Part I Table No.*
Emphysema, pulmonary (113)	—	c
Empyema (110a)	—	c, 22
Encephalitis, acute infectious (lethargic or epidemic) (37)	138	c, 8, 22, 24†, 28, 28A†, 29
Deaths : according to type, 1931 to 1947	139	—
Notifications : 1931 to 1947	139	—
Encephalitis, post vaccinial (see **Accidental deaths**—vaccinia, etc.)		
Encephalitis (non-epidemic)	—	c, 22
Endocarditis acute (91)	—	c, 8
Enteritis and diarrhœa (119, 120)	212	c, 22
Death rates :		
Age and sex with C.M.Is., 1931–47 ...	213	—
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Enteritis and diarrhœa (under two years) (119)	—	10, 11, 12, 13A, 15†, 24†
Death rates under 1 year :		
1861–1945, 1931 to 1947	19	—
1936–39, 1940 to 1947	30	—
Age and sex, 1946 and 1947	42	—
Legitimacy and sex, 1946 and 1947 ...	46	—
Regions, 1946 and 1947	48	—
Death rates under 4 weeks :		
1936–39, 1940 to 1947	30	—
Epilepsy (85)	—	c, 22
Death rates :		
Ages 1–4, 1936–39, 1941 to 1947 ...	57	—
Erysipelas (11)	92	c, 8, 11, 22, 24A†, 26, 28, 28A†, 29
Deaths : 1923–47	93	—
Notifications : 1923–47	93	—
Notification rates : Age and sex, 1944 to 1947	93	—
Fatality rates :		
1923–47	93	—
Age and sex, 1944 to 1947	93	—
Erythrocytosis (76b)	—	a
Executions, legal (198)	—	a
Exophthalmic goitre (see **Goitre**)		
Fallopian tubes, diseases of (139a : 2)	—	a, 7
Fatty degeneration of heart (see **Myocardial degeneration described as fatty**)		
Fever, continued (200a : 2, pt.)	—	28
Fever, paratyphoid (2)	73	b, 26–29
Notifications :		
Degree of diagnosis revision	72	—
Notification rates :		
Age and sex, 1944 to 1947	75	—
Regions, 1944 to 1947	74	—
Fatality rates :		
Age, 1944 to 1947	75	—
Density aggregates, 1944 to 1947 ...	74	—
Fever, puerperal and pyrexia (see **Pregnancy, childbearing, etc.**)		
Fever, relapsing (31)	—	b, 28
Fever, rheumatic (58)	173	c, 8, 22, 24A†
Deaths : age and sex, 1946 and 1947 ...	175	—
Death Rates :		
Age and sex, with and without mention of heart, 1940 to 1947 ...	174	—
Ages 1–4, 1936–39, 1941 to 1947 ...	57	—
Fever, scarlet (8)	78	c, 8, 9, 10, 22, 24† 26–29
Death rates :		
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Notification rates :		
Age and sex, 1944 to 1947	80	—
All ages 1911 to 1947	78	—
Regions, ages 0–4 and 5–14, 1944 to 1947	79	—
Fatality rates :		
Age and sex, 1944 to 1947	80	—
Regions, 1940–47	79	—
Fever, typhoid (1)	73	b, 26–29
Notifications :		
Degree of diagnosis revision	72	—
Notification rates :		
Age and sex, 1944 to 1947	75	—
Regions, 1944 to 1947	74	—
Fatality rates :		
Age, 1944 to 1947	75	—
Density aggregates, 1944 to 1947 ...	74	—
Fevers, typhoid and paratyphoid (1, 2) (see also **Fever, typhoid** and **Fever, paratyphoid**)	73	c, 8, 9, 10, 24†, 26–29
Fever, undulant (brucellosis) (5)	—	b
Fever, yellow (38a) ... ... (No cases reported)	—	a
Fossæ, nasal and annexa, diseases of (104)	—	c
Gangrene (98)	—	c
Gas gangrene (24a)	—	a
Gastritis (see **Stomach, inflammation of the**)		
General paralysis of the insane (30b) ...	113	c
Death rates :		
Age and sex, 1940–45, 1946, 1947 ...	114	—
Sex, 1931 to 1947	113	—
Genital organs, female, diseases of (139) ...	—	c
Genital organs, male (except prostate) diseases of (138)	—	b
German Measles (38d)	—	b, 22
Glands, diseases of (see under name of gland)		
Glioma (not specified as benign) (see under **Cancer, etc.**)		
Goitre, exophthalmic (63b)	182	c, 8, 24A†
Death rates :		
Age and sex with C.M.Is., 1931 to 1947	182	—
Regions by sex, 1947	183	—

* See list of general tables at head of index.

† For 1947, see also Appendix table showing distribution by *Standard* regions.

Diseases, Causes of Death and International List Nos.	Text Volume Page No.	Part I Table No.*
Goitre, simple (63a)	—	c
Gonococcal infections (25)	—	b, 22
Gout (60)	—	b
Hæmolytic disease of newborn (161e : 1) ...	—	b, 11, 12, 13A, 22, 24A†
Death rates under 1 year :		
1936–39, 1940 to 1947	30	—
Age and sex, 1946 and 1947	42	—
Legitimacy and sex, 1946 and 1947 ...	46	—
Death rates under 4 weeks :		
1940 to 1947	30	—
Hæmophilia (72b)	—	b, 22
Hæmorrhage, cerebral (see **Cerebral hæmorrhage**)		
Hæmorrhagic conditions (72)	—	c, 11, 12
Heart, congenital malformations of (157c)	—	c, 22
Heart disease (90-95)	199	c, 8, 22, 24† App. A
Heart disease, functional (without organic lesions) (95a)	—	c
Heart disease specified as rheumatic but otherwise ill-defined (95b)	173	c
Age and sex, 1946 and 1947	176	—
Heart failure (200a : 1)	263	b
Helminths, diseases due to (40-42) ...	—	b
Hemiplegia and other paralyses of unstated origin (83d)	—	c
Death rates :		
Age and sex with C.M.Is., 1931–47 (including 83a, cerebral effusions of unstated origin)	195	—
Hernia (122a)	—	c, 22
Hernia, intestinal obstruction (122) ...	—	c, 11 12, 22
Death rates : ages 1–4, 1936–39, 1941 to 1947	57	—
Herpes zoster (38c)	—	b
Hodgkins disease (see **Pernicious lympho-granulomatosis**)		
Homicide (165-168)	—	c, 22, 25
Hydatid disease (41)	—	b
Hydrocephalus, congenital (157a)	—	c, 22
Idiopathic steatorrhœa (see **Steatorrhœa**)		
Ileus, paralytic, without stated cause (122b : 2)	—	b
Ill-defined causes of death (199, 200) ...	263	c, 24A†
Indefinitely certified causes of death, inquiries respecting	265	—
Infanticide (Infants under 1 year) ...	—	b, 25
Infants under one year, diseases peculiar to (158-161)	30	b, 11, 12, 13A
Infarction, hæmorrhagic, of lung (111a) (see **Lung, congestion, etc.**)		
Infections, gonococcal (25)	—	b
Infections of the newborn (161c)	—	b
Death rates under 1 year : age and sex, 1946 and 1947	42	—
Infection, purulent, and septicæmia (24) ...	—	c
Infective diseases other than tuberculosis (1-12, 23-44)	—	b, 11, 12, 15†
Infective and parasitic diseases (1-44) ...	—	c, 11, 12, 15†
Influenza (33)	117	c, 8, 9, 11, 12, 22, 24† App. A
Death rates :		
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Ages 50–54, 55–64, by sex, 1936–38, 1943–45, 1946 and 1947	64	—
Ages 65–69, 70 and over, by sex, 1936–38, 1943–45, 1946 and 1947...	65	—
C.M.Is. in quarters, with variations in air temperatures, 1921 to 1947 ...	118	—
Regions, age and sex, 1947	120	—
Injury at birth (see **Birth injury, at**) ...		
Intestinal obstruction (122b)	—	c, 8, 22
Intestines, diseases of, except hernia and obstruction (123)	—	c
Intoxication due to maternal toxæmia (161b)	—	b, 13A, 22
Death rates under 1 year : age and sex, 1946 and 1947	42	—
Intra-cranial lesions of vascular origin (83)	194	c, 8, 24†, App. A
Death rates :		
Age and sex, 1931–47...	194	—
Ages 50–54, 55–64, by sex, 1936–38, 1943–45, 1946 and 1947	64	—
Ages 65–69, 70 and over, by sex, 1936–38, 1943–45, 1946 and 1947 ...	65	—
Regions, by age and sex, 1947 ...	197	—
Intussusception (122b : 1)	—	c
Joints and other organs of movement, diseases of (156)	—	c
Kidney, cystic disease of (157h)	—	b, 22
Larynx, diseases of the (105)	—	c, 22
Death rates : ages 1–4, 1936–39, 1941 to 1947	57	—
Lead poisoning (78)	—	b
Leprosy (23)	—	b
Leukæmia and aleukæmia (74)	189	c, 8, 22
Death rates :		
Age and sex with C.M.Is., 1931 to 1947	190	—
Regions, age and sex, 1947	191	—
Locomotor ataxia (30a)	113	c
Death rates :		
Age and sex, 1940–45, 1946 and 1947	114	—
Sex, 1931 to 1947	113	—

* See list of general tables at head of index.

† For 1947, see also Appendix table showing distribution by *Standard* regions.

Diseases, Causes of Death and International List Nos.	Text Volume Page No.	Part I Table No.*
Lung, abscess of (114d)	—	c
Lung, congestion, œdema, hæmorrhagic infarction, and thrombosis of (111) ...	—	c, 8, 22
Lung, gangrene of (114c)	—	b
Lymphatic system, diseases of (101) ...	—	b
Lymphogranulomatosis, pernicious (see **Pernicious lymphogranulomatosis**)		
Lymphosarcoma (see **Cancer**)		
Malaria (28)	—	b, 28‡
Malformations, congenital (157)	—	c, 11, 12, 13A, 15†, 22, 24A†
Death rates under 1 year :		
1936–39, 1940 to 1947	30	—
Age and sex, 1946 and 1947	42	—
Legitimacy and sex, 1946 and 1947...	46	—
Regions, 1946 and 1947	48	—
Death rates under 4 weeks :		
1936–39, 1940 to 1947	30	—
Death rates :		
Ages 1–4, 1936–39, 1940 to 1947 ...	57	—
Mastitis during the puerperium and lactation (see **Pregnancy, childbearing, etc.**)		
Maternal causes (excluding abortion) (142-150)	216	c, 24A†
Deaths and death rates : (see **Pregnancy, childbearing, etc.**)		
Measles (35)	121	c, 8, 9, 10, 11, 12, 15†, 22, 24† 26–29,
By Quarters, 1931 to 1947	122	
Death rates :		
Ages 1–4, 1911–20, 1921 to 1947 ...	56	—
Regions, at ages 0–4, 1946 and 1947	124	—
Death rate under 1 year :		
1936–39, 1940 to 1947	30	—
Legitimacy and sex, 1946 and 1947	46	—
Regions, 1946 and 1947	48	—
Notifications :		
Degree of diagnosis correction ...	72	—
Notification rates :		
Age and sex, 1944 to 1947... ...	123	—
Regions, ages 0–4, 5—14, 1946 and 1947	124	—
Fatality rates :		
Age and sex, 1944 to 1947... ...	123	—
Regions, at ages 0–4, 1946 and 1947	124	—
Medulla and spinal cord, diseases of the (82)	—	c
Melæna neonatorum (161d)	—	b, 11, 12, 13A, 22
Death rates under 1 year :		
Age and sex, 1946 and 1947	42	—
Meningitis (non-meningococcal) (81) ...	—	c, 8, 11, 12, 22
Death rates :		
Ages 1–4, 1936–39, 1941 to 1947 ...	57	—
Ages 5–9, 10–14, 1936–39, 1941 to 1947 (with meningococcal meningitis (6))	59	—
Mental disorders and deficiency (84) ...	—	c
Mitral valve, diseases of the (92b : 1) ...	—	c
Age and sex, 1946 and 1947	175	—
Monstrosities (157d)	47	b, 22
Mumps (44c)	—	b
Mycosis (43)	—	b
Myocardial degeneration (93c)	199	c, 24A†
Myocardial degeneration described as fatty (93c : 2)	—	c
Death rates : age and sex, 1931–47 ...	202	—
Myocarditis, acute (93a)	—	c
Myocarditis chronic, specified as rheumatic (93b)	—	c
Age and sex, 1946 and 1947	176	—
Mycardium, diseases of the (93)	199	c, 8
Myxœdema and cretinism (63c)	184	c
Nasal fossæ and annexa, diseases of the (104)	—	c
Nephritis (130-132)...	213	c, 8, 22, 24†, App. A
Death rates :		
Age, sex and type, 1931–47	214	—
Age, sex and region, 1947	215	—
Ages 1–4 (acute nephritis), 1936–39, 1941 to 1947...	57	—
Note : C.M.Is. (Table 8) are given according to whether acute, chronic or unspecified.		
Nervous system and sense organs, diseases of (80-89)	194	c
Œsophagus, diseases of the (116) ...	—	b
Old age (see **Senility, old age**)		
Ophthalmia neonatorum (25, pt.)	—	28, 29
Osteomalacia (66a)...	—	a
Osteomyelitis and periostitis (154) ...	—	c, 8, 22
Ovaries, etc., diseases of the (139a) ...	—	c
Palate, cleft, harelip (see **Cleft palate, harelip**)		
Pancreas, diseases of the (other than diabetes) (128)	—	c
Paralysis agitans (87c)	—	c, 8, 24A†
Paratyphoid fever (see **Fever**)		
Pellagra (69)	—	b
Pemphigus neonatorum (161c : 2) ...	—	b, 11, 12, 13A, 22
Death rates under 1 year : age and sex, 1946 and 1947	42	—
Pericarditis (90)	—	c
Pericarditis, chronic rheumatic (90a) ...	—	b
Age and sex, 1946 and 1947	175	—
Pernicious anæmia (see **Anæmia, pernicious**)		

* See list of general tables at head of index.

† For 1947, see also Appendix table showing distribution by *Standard* regions.

‡ Notifications of cases contracted in England and Wales:.

Diseases, Causes of Death and International List Nos.	Text Volume Page No.	Part I Table No.*
Pernicious lymphogranulomatosis (Hodgkins disease) (44b)	139	c, 8, 24A†
Deaths :		
Regions by sex, 1947	140	—
Death rates :		
Age and sex, 1911–47	140	—
Regions by sex, 1947	140	—
Pharynx, diseases of (see **Buccal cavity**)		
Phthisis (see **Tuberculosis, respiratory**)		
Pink disease (66b : 1)	186	b, 22
Pituitary gland, diseases of (62)	—	b
Placenta prævia (see **Pregnancy, childbearing, etc.**)		
Plague (3) (no cases reported)		
Pleurisy (110)	—	c, 8, 22
Pneumonia (107-109)	205	c, 8, 9, 11, 12, 13A, 15†, 22, 24†, 28, 28A†
Death rates : age, sex and region, 1947	208	—
Pneumonia, broncho } **,, lobar** } **,, unspecified** }	205	c, 8, 22
Death rates :		
Age and sex, with C.M.Is., 1931 to 1947	206	—
Ages under 1 year, by sex, 1946 and 1947	42	—
Ages 5–9, 10–14, 1936–39, 1940 to 1947	59	—
Ages 50–54, 55–64, 1936–38, 1943–47	64	—
Ages 55–69, 70 and over, 1936–38, 1943–47	65	—
Poisoning, chronic and intoxication (77-79)	—	c
Poliomyelitis and polioencephalitis, acute (36)	124	c, 8,9 , 22, 24† 26–29
Deaths :		
Age and quarters, 1946 and 1947 ...	127	—
Regions, county boroughs and administrative counties, by age, 1947	129	—
Separately, 1931 to 1947	125	—
,, by age and sex, 1944–47...	126	—
Death rates :		
Age, 1944–47	126	—
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